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HALF-YEARLY ABSTRACT

OF THE

MEDICAL SCIENCES.

JANUARY—JUNE.

1872.

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THE

HALF-YEARLY ABSTRACT

OF THE

MEDICAL SCIENCES:

BEING

A DIGEST OF BRITISH AND CONTINENTAL MEDICINE,

AND OF

THE PROGRESS OF MEDICINE AND THE COLLATERAL SCIENCES.

Apparatu nobis opus est, et rebus exquisitis undique et collectis, arcessitis, comportatis.
CICERO.

EDITED BY

WILLIAM DOMETT STONE, M.D., F.R.C.S. (EXAM.)

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HALF-YEARLY ABSTRACT

OF

THE MEDICAL SCIENCES,

ETC.

PART I.

PRACTICAL MEDICINE, PATHOLOGY, & THERAPEUTICS.

SECT. I.—GENERAL QUESTIONS IN MEDICINE.

ART. 1.—*On Disease and its Remedial Treatment.**

By JOHN S. BRISTOWE, M.D., F.R.C.P., Physician to St. Thomas' Hospital.

(*Medical Press and Circular*, March 27.)

THE first lecture was delivered on the 6th March. The lecturer endeavoured in the first place to define the word "disease." He argued from the facts of parasitic diseases, of infectious fevers, such as scarlet fever, of inflammations, of tumours, and of diseases originating in mechanical causes, that the biography of every disease comprises some specific cause, and certain resultant phenomena, vital, chemical, or mechanical, which are, or which produce, the symptoms by which we recognise its presence; and then suggested the following as a definition of disease, namely, that it is "a complex of some deleterious agency acting upon the body, and of the phenomena (actual or potential) due to the operation of that agency." He admitted that there were difficulties in the way of accepting this definition, and proceeded to discuss the importance in this respect of some of these difficulties—especially those arising out of developmental diseases, inflammations, and tumours, and out of the fact that all diseases involve (in a greater or less degree), not only certain groups of pathological changes springing directly from their respective morbid causes, but that these primary pathological changes themselves tend to evoke others, these again a tertiary series, and so on continuously. In reference to this latter subject, he adduced scarlet fever, syphilis, and various other diseases, and enumerated the various incidents essential to each, and most of those which are apt to come on as complications or sequelæ; and argued from the facts which he brought forward, that in the first place every separate incident of a disease considered with its

* Croonian Lectures; delivered at the Royal College of Physicians of London.

immediate cause, or with its immediate consequence, might properly be regarded as a disease, and in the second place, only those morbid conditions should be regarded as constituting an essential part of the primary disease which spring directly from the operation of its cause, and none of those which continue in active operation after the destruction or disappearance of the cause.

He then enumerated, for the purposes of his subsequent remarks, certain classes of diseases, namely—1st, functional; 2nd, those originating in excess, deficiency, or improper quality of nourishment; 3rd, those arising from retained excretions; 4th, those due to the action of poisons; 5th, those originating in mechanical causes; 6th, parasitic diseases; 7th, inflammatory diseases and tumours; and 8th, those generated by contagium. And he devoted the remainder of the lecture to the consideration, in respect to several of these, of the methods by which they act injuriously on the system, and the methods by which in the event of recovery taking place, that recovery is effected by the operation of nature. On the whole, he appeared to entertain the belief that nature, if regarded as a physician, is somewhat of a bungler; and that the so-called *vis medicatrix* is often wide of the mark, often inoperative from its very violence, and sometimes (as in the case of the exanthemata) little else than a process for multiplying enormously the poison and scattering it broadcast.

The second lecture was given on the 8th March. Dr. Bristowe commenced this by quoting from Dr. Paris's *Pharmacologia* the objects which that physician enumerates as desirable to obtain by mixing and combining medicinal substances. And while admitting the importance of endeavouring to carry out those objects in writing prescriptions, he pointed out that such rules are rather for those who understand, or who believe they understand, the actions of medicines in relation to the processes of disease, than for those who are investigators of the actions of drugs. He then went on to consider some of the difficulties with which medical men have to contend in endeavouring to estimate the curative influence of drugs. Among these he enumerated—1st, the regular course of many diseases, in virtue of which the same result is apt to follow on the most opposite plans of treatment; 2nd, the unanticipated changes which attend many (especially functional) diseases, and in which, therefore, a natural change for the better is often ascribed to the influence of drugs; 3rd, the fact that medicines are constantly combined, not merely with other drugs, but with changes of diet and numerous other hygienic conditions, which latter are themselves probably of important effect; and 4th, the domination of theories of disease and of treatment, inclusive of the theories which practitioners are apt to invent (half unconsciously) for their own guidance.

He next made a few observations upon functional diseases, and pointed out that, little as is understood of their intimate pathology, it is over these perhaps more than over any other kinds of diseases that physicians have influence by means of their art. Diseases due to poisons, and those originating in excess, deficiency, and improper quality of nourishment, and the morbid conditions due to the retention of bile, urea, &c., were dismissed with a few remarks. Upon those which he termed mechanical, however, he spoke at some length. He took successively the

cases of canals obstructed by concretions, and those in which stricture is present (including among the latter diseases of the cardiac valves); and endeavoured to show that the muscular hypertrophy and dilatation of canals which follow obstruction are in no proper sense of the term either beneficial or curative; that the dilatation is as much a source of weakness as the hypertrophy is a source of strength, and that they neutralize one another almost from the beginning; and he pointed out that experience had long since proved that in all such cases the efforts of the medical man ought to be to restrain rather than to excite the action of the hypertrophied organs. In reference to parasitic diseases he asserted that only those in which drugs can be made to operate directly are amenable to curative treatment; and remarked that he should be inclined to believe in the curability of trichiniasis by internal remedies when itch should be shown to be capable of elimination by brimstone and treacle or diaphoretics. He then passed on to the subject of inflammations, which he discussed at considerable length; and while admitting the beneficial effects of local remedies when they could be applied directly to local inflammations, and the beneficial influence in reference to many of the symptoms and complications of inflammation which might be effected by various remedial measures, he still inclined strongly to the belief that inflammations as a rule do not admit of being curtailed in their duration by drugs taken into the system. He agreed with Dr. Hughes Bennett and others as to the incurability of pneumonia by medicines; and he agreed also with Sir W. Gull and Dr. Sutton in their observations in respect to the treatment of rheumatism.

The third lecture was delivered on the 13th March. The lecturer spoke first of effusions, and more especially of anasarca and encysted dropsy. He showed by examples that in all cases where the cause of dropsy is removed the dropsy disappears of itself; and hence that the first indication for treatment is the cure or removal of the cause; but that in most cases the dropsy is traceable to progressive structural diseases which do not admit of cure. He insisted, however, that the stage of dropsy is very frequently anticipated in consequence of general ill-health, and that hence in very many cases the improvement of the general health is efficient in removing the dropsy for a time. He admitted the good effects of diuresis, purgation, and diaphoresis, and more especially of the latter, in anasarca; but he doubted whether either of them had any directly beneficial influence on encysted dropsies.

In speaking of innocent tumours, he referred especially to goitre and the supposed influence of iodine over that disease. He remarked that when the influence of iodine over goitre was first discovered, it was equally found to cure man of his testicles and woman of her breasts; but that this effect of iodine over the latter organs had long since been disproved. And he ventured to believe that goitrous necks are just as numerous in the Swiss valleys now as they were before iodine was discovered.

He made some remarks upon tubercle and syphilis, and then devoted the rest of his lecture to the specific infectious diseases. He first spoke briefly of the importance of preventive measures; then of the importance of an accurate acquaintance with the natural history of each disease, so that the physician might foresee and anticipate danger and complications; and then of the many ways in which during the progress of

his malady he might relieve and benefit his patient by treating the symptoms. And then, in conclusion, he discussed at some length the theory of elimination, with especial reference to diseases of this class. He insisted that although the contagium undoubtedly did circulate in the blood, and probably multiplied therein, it remained in it for a marvellously short time, since it could not be detected microscopically in the circulating fluid, and the blood itself was rarely if ever infective; and that there is no sufficient reason to believe that the specific symptoms of these specific diseases are due either to the presence of the contagium in the blood, or to its operation upon it. He insisted on the contrary (and brought forward arguments in favour of his opinion) that the specific effects only arise when the circulating contagium sows itself in the solid tissues external to the vessels, and that these specific effects are due to the processes which go on outside the vessels. He maintained that the so-called elimination from the blood is, in fact, the sowing of the disease in the tissues of the body, preliminary to its multiplication, or fructification, therein; and that it is during this latter process that most, if not all that is dangerous occurs. He argued from the exanthemata to cholera, and maintained that here equally as in small-pox and scarlet fever, the so-called process of elimination of poison is a process of manufacture of poison. And argued, in reference to all such diseases, that experience, on the whole, is decidedly opposed to the efficacy of treatment aiming at elimination.

Art. 2.—*Pathology and Treatment of Pyrexia.*

By Charles Murchison, M.D., LL.D., F.R.S., Physician to St. Thomas' Hospital, and Joint Lecturer on Medicine at St. Thomas' Hospital Medical School; etc.

(*British Medical Journal*, February 17.)

The facts and arguments bearing on the pathology of pyrexia Dr. Murchison sums up as follows:—

1. That pyrexia is a morbid condition of the blood, due to the entrance of some poisonous matter from without or generated within the body, or to some local injury or inflammation, exercises a paralysing influence on certain portions of the nervous system, and particularly on the sympathetic and the vagus.

2. Increased rapidity of the heart's action is one of the earliest results.

3. A second result is a rapid disintegration of the nitrogenous tissues into substances of a simpler chemical construction, while little or no fresh material is assimilated to compensate for the loss. Increased temperature, great muscular prostration, and loss of weight are the natural consequences.

4. Non-elimination, from any cause, of the products of this disintegration gives rise to cerebral (typhoid) symptoms or local inflammations.

5. The impaired nutrition of the heart itself and of the rest of the body, in conjunction with the polluted state of the blood and the nervous paralysis already referred to, induces in severe cases of fever great weakness of the cardiac contraction, and stagnation of blood in the capillaries in different parts of the body.

The Prognosis in any case of pyrexia Dr. Murchison states will of course be greatly influenced by its cause; but, irrespectively of the cause, there are certain conditions which must always be regarded as of serious import.

1. In grave fevers the prognosis is worse in robust full-blooded persons with abundance of muscle and fat than in those of spare habit, because in the former there is more material to spare for disintegration during the febrile process. In scarlatina it is a matter of daily observation that the plump and ruddy child succumbs, while the spare and more delicate-looking child pulls through. And in adults it may be said that all fevers are grave in proportion to the development of muscle and fat.

2. The prognosis is always bad when severe fevers attack individuals in whom the defæcation of the blood is naturally imperfect—for example, in persons of a gouty diathesis.

3. The danger in any case of fever is increased by the fact of the patient having a naturally weak heart, not so much from the presence of valvular disease as from weakness in the contracting power of the muscular walls. Its strength may be sufficient for the ordinary work in health; but when fever occurs, the work is increased while the organ is further weakened, and then it is apt to break down.

4. The danger is always great when there is evidence of antecedent renal disease. To the kidneys we must look for the elimination of the large amount of nitrogenous detritus resulting from the febrile process; and, when the eliminative power of these organs is impaired by disease, the peccant material is retained in the system, with the deleterious consequences already described. Here, again, the kidneys may be sufficiently sound for the due performance of their functions in a state of health, although they are quite incompetent to discharge the additional work thrown upon them in pyrexia.

5. In most fevers the prognosis is bad in proportion to the intensity of the pyrexia, as measured by the thermometer. With few exceptions, a case with a temperature of 105 deg. must be looked on as severe; and one with a temperature of 107 deg. as highly dangerous.

6. In any case of fever the prognosis will be bad in proportion to the intensity of the typhoid state; and when convulsions occur in the typhoid state, recovery is rare.

7. In any case the prognosis will be bad in proportion to the weakness of the heart, and the tendency to stagnation of blood in the capillaries of the lungs and other parts of the body.

In regard to the treatment Dr. Murchison states that our objects ought to be as follows:—

1. To remove, when possible, the cause on which the fever depends.

2. To promote elimination, not merely of any morbid poison, but of the products of exaggerated metamorphosis in the blood and tissues.

3. To reduce the temperature and the frequency of the action of the heart.

4. To maintain the nutrition of the tissues and stimulate the action of the heart by appropriate food and stimulants, taking care, at the same time, not to excite congestion or increase the work of the already overtasked glandular organs.

5. To relieve dangerous and distressing symptoms.
6. To obviate and counteract secondary complications.

It is not often that we have it in our power to remove the cause of pyrexia; but the object is one always to be kept in view, and sometimes the main efforts of our treatment must be directed to secure it; as, for example, when pyrexia depends upon pent-up pus, an obstructed bowel, or gouty, syphilitic, or periosteal inflammation.

The elimination of any morbid poison, as well as of the products of exaggerated metamorphosis, will often be promoted by the judicious employment of diaphoretics, diuretics, purgatives, and emetics. The old practice of giving a purgative to unload the portal circulation and promote the action of the liver, is undoubtedly a good one, and is particularly advisable in persons of robust habit, or who live too well. In mild cases of pyrexia, the only treatment necessary consists in the avoidance of any chill, and in the administration of a mild aperient, followed by frequent doses of diuretics and diaphoretics, such as the citrate of potash, or the liquor ammoniæ acetatis with spirit of nitrous ether. Elimination will also be promoted by a plentiful supply of fresh air, which will favour the escape of carbonic acid from the lungs, and by the free use of diluents, which will help to wash away through the kidneys the products of tissue-waste. In all grave cases of fever the importance of maintaining the action of the kidneys, and of keeping a good watch on the state of the urine are to be remembered, noting carefully not so much the colour of the urine and the presence or absence of lithates (both of which characters will depend much on the quantity), but the quantity and the presence or absence of albumen. When the quantity becomes notably diminished, or albumen appears, advantage will often be derived from hot poultices to the loins, aperients, diaphoretics, diluents, and diuretics. But while we promote elimination, we must take care that the means for this end do not weaken too much the action of the heart; and we must remember that, in some fevers, the natural processes of elimination are excessive, and conduce to dangerous exhaustion and death.

For reducing the intensity of the pyrexia, different measures have been proposed. *Blood-letting* was at one time universally resorted to for this object, but in this country it is now entirely discarded, because it was found to increase one of the great dangers in pyrexia, viz., failure of the heart's action. *The external use of cold water* is one of the most certain means of reducing temperature in pyrexia, and in certain cases is attended with good results.

Statistics have been appealed to to prove the great success of the cold-water treatment of fevers (particularly of enteric fever) as contrasted with that of an expectant method; and, although other conditions not stated may have helped to influence the result, they suffice to show that the practice is not beset with the dangers commonly imagined. But the most conclusive facts in favour of the practice are those observed in certain cases of hyperpyrexia by Dr. Wilson Fox* and others, where its employment was followed by recovery from an elevation of temperature (110° Fahr.) which under every other method of

* On the Treatment of Hyperpyrexia by means of the External Application of Cold. London: 1871.

treatment has been speedily followed by death. At the same time there are many cases of pyrexia in which the cold affusion or immersion would be unsuitable or injurious. It is likely to be of most service when the temperature is unusually high; and in all cases the practice is contra-indicated when the temperature is under 102° Fahr., or when the extremities are cold, although the temperature of the central parts of the body be high; and it must always be employed with caution when there are the signs of weakened cardiac action or of stagnation of blood in the capillary circulation, although it may be noted that in one of Dr. Fox's patients, who was apparently rescued from death, the face was cyanotic and the radial pulse imperceptible.

There are different plans for employing cold water in the treatment of pyrexia, such as the cold affusion practised by Currie, packing in a cold wet sheet resorted to by Brand, or immersion in cold baths. The last is the method now most in fashion. The patient is placed in a bath having the temperature of from 50° to 70° Fahr., or better, as Ziemssen recommends, in one whose temperature is about 10° below that of the body, but which, after the patient's immersion, is gradually cooled down to 68° by adding cold water. He should remain in the bath for half an hour, or until shivering comes on, and all the time he is in the bath his limbs ought to be rubbed by assistants. He is then to be hastily dried and put in a warm bed. For some time after the bath, the temperature in the rectum continues to fall as the trunk parts with its heat to the extremities; but as soon as the temperature in the rectum rises again to 104°, the patient ought to have another bath. In the early stages of the fever, as many as seven or eight baths in the day may be necessary. When cold affusion or immersion is contra-indicated or inexpedient, frequent sponging of the surface with cold or tepid water will also help to cool the body, and is often a source of much comfort to the patient.

Quinine in large doses has an undoubted influence in lowering the temperature of pyrexia. In most cases of severe pyrexia, ten, fifteen, or twenty grains will, within an hour or two, cause a fall of the temperature to the extent of three or four degrees, and to a less degree of the pulse.* It is true that the effect passes off after a few hours, and that there is no good evidence (except in malarious fevers) of its cutting short the natural course of the attack; but the effect may be maintained by a repetition of the dose; and the remedy has often appeared to me to be of signal service when a pyrexia was at its crisis, and when the temperature was rising in place of falling.

Digitalis, Aconite, and Veratrum Viride have a marked power in reducing the pulse, and, to a less extent, the temperature in pyrexia, and are, in Dr. Murchison's opinion, too much neglected for these objects in practice. Veratrum viride is largely used in America in the treatment of fevers, and its effect upon the pulse is speedy and most decided; the only objection to its use in private practice which Dr. Murchison's experience suggests is its liability to induce sudden nausea and faint-

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* For evidence on this point, see Report of Committee (of which Dr. Murchison was a member) of Clinical Society.—*Trans. Cl. Soc.*, 1870, vol. iii.

ness, but these symptoms are transient, and cease on the administration of a stimulant. Ten or fifteen minims of the tincture may be given every four or six hours. Aconite is a remedy of great value for reducing the pulse and temperature in fever, and especially in the pyrexia resulting from inflammations, and is much less used than it deserves to be. Digitalis is another remedy which Dr. Murchison has often found very serviceable in various forms of pyrexia. While increasing the force of the cardiac contractions, it diminishes the frequency of the pulse, reduces the temperature, and increases the flow of urine. Lastly, *antimony* reduces, in a marked degree, the frequency of the pulse in pyrexia, and promotes diaphoresis and mucous secretion. It was at one time largely used in all fevers, but in many it is contra-indicated by its tendency to weaken the contracting power of the heart.

The nutrition of the body may be maintained by appropriate food, in the form of milk, beef-tea, eggs, and farinaceous articles.

In every case of pyrexia, we must combat dangerous symptoms as they arise. Stagnation of blood in the pulmonary capillaries impeding the aëration of the blood is to be met by stimulants, such as alcohol, carbonate of ammonia, and ethers. Digitalis, by strengthening the heart's action, and turpentine, which seems to stimulate the capillary circulation, are also useful under these circumstances; while advantage will likewise be derived from mustard and linseed poultices to the chest, sometimes from dry cupping of the chest, and from warm applications to the feet. When uræmic symptoms predominate, the action of the skin and bowels is to be promoted, digitalis and saline diuretics may be given to increase the flow of urine, sinapisms and linseed-poultices are to be applied over the loins; while attempts may be made to rouse the patient by cold affusion to the head, by blistering the shaven scalp with liquor ammoniæ, and by sinapisms to the nape and feet. Diarrhœa, pain, sleeplessness and delirium—which, if unchecked, hasten exhaustion and prevent recovery—must be treated by appropriate means. We must counteract, as far as possible, secondary complications, and two errors must be avoided; first, the remedial measures adopted should not thwart the natural modes of recovery, or favour the natural modes of death; secondly, pyrexia must not be treated on a purely expectant plan, since the natural termination of pyrexia may be death, as well as recovery.

Art. 3.—*On the Cerebral Mechanism of Thought and Speech.**

By W. H. Broadbent, M.D., F.R.C.P., Physician to St. Mary's and the Fever Hospitals.

(*The Lancet*, February 24.)

The objects of the paper were stated to be, by means of the light thrown upon cerebral physiology by cases of loss and derangement of

* Read at a Meeting of the Royal Medical and Chirurgical Society, on February 13th.

speech, to construct a theory of the mechanism of thought and language, and to connect this with the facts of cerebral structure so far as known.

Ten cases were related in the first place, of which the most interesting were—

1. A case of right hemiplegia with loss of speech and writing. The hemiplegia temporary; the loss of speech permanent, except as to a few words mostly used in the expression of feeling; loss of writing absolute. She was, however, able to read; and displayed great energy and resource in recovering the control of her property, of which she had been deprived under the idea that she was imbecile. On post-mortem examination three years after the attack, two apoplectic cysts were found in the upper margin of the fissure of Sylvius of the left hemisphere: one in the posterior part of the third frontal convolution; another further back, the latter involving also some convolutions of the island of Reil.

2. A case of abscess in the left frontal lobe, not affecting the surface of the third convolution or the island of Reil, but involving the white substance of the third frontal gyrus deeply. The order in which the symptoms appeared was—slight paralysis of right face; then incipient loss of speech and writing; a few days later total loss of speech and writing, with right hemiplegia; subsequently partial recovery of speech.

7. A case of congenital aphasia, without idiocy, in a boy aged twelve, who understood all that was said, could be sent on errands, &c., could write his name, and copy from printed into written characters, but could not speak except to say "yes," "no," "father," and "mother;" indistinctly answered "kreigur kruger" to all questions; could not write the simplest word, such as "no" from dictation, or understand the simplest written question, but could write and understand figures.

8. A case in which an intelligent man, after head symptoms, completely lost the power of reading either printed or written characters, while he could write readily and correctly from dictation or spontaneously. His conversation was good and his vocabulary extensive, but at times he was at a loss for a name, and he was quite unable, when asked, to name the simplest and most familiar object presented to his notice. The loss of power to read was of course a part of this more general loss of power to name. He died from hæmorrhage into the left temporo-sphenoidal lobe, which penetrated into the ventricle. Two old hæmorrhages were discovered: one in the substance of the infra-marginal convolution of this lobe; another, larger, which had apparently caused softening of the adjacent brain-substanee, between the extremity of the fissure of Sylvius and the ventricle where the descending cornu is given off. The latter would involve most important fibres. The extent of softening could not be ascertained on account of the recent hæmorrhage into the same part.

The 9th and 10th were cases in which, with derangement of speech in the 9th, and absolute loss in the 10th, there was loss of comprehension of words with ready interpretation of signs.

The cases related, so far as they bear on the question, are all corroborative of the view which assigns a close functional relation with language to the left third frontal gyrus; and, as the result of his own

observation and of examination of many cases published as exceptions, the author considers this relation to be absolutely established, not, however, in the sense of its being the seat of a faculty of language, but as an important link in the cell and fibre mechanism for speech, which mechanism may be interrupted at other points above or below, as well as at this particular node.

The distinction established by Sanders, W. Ogle, Bastian, and others between amnesia and aphasia proper or ataxic aphasia implies lesion at different parts; and a further subdivision of amnesic cases may be made, Case 8 being used as an illustration. Here an object seen no longer evoked the appropriate name; the channel between the visual centre and the intellectual centre was interrupted. And if a similar interruption occur in the channel from the auditory centre to the intellectual centre, so that articulate sounds no longer revive the accustomed intellectual associations, the patient will on the one hand be incapable of understanding what is said to him, and, on the other, will have no check on his own utterances. The lesion will in a case of this kind be at a different spot from that which destroys the memory for words (amnesia), or the memory for the utterance of words (aphasia).

The results of the author's careful examination into the course and distribution of the fibres in the cerebral hemispheres are, that the fibres radiating from the crus and central ganglia and the fibres of the corpus callosum are distributed almost exclusively to the convolutions of the longitudinal and Sylvian margins of the hemispheres, the intervening convolutions receiving no radiating or callosal fibres. These latter convolutions, which are thus withdrawn from immediate relation with the outer world, which are also those that are latest in order of development, and which make the difference between the human and quadrumanous brain, he considers will be those engaged in intellectual operations, receiving the raw material of thought from marginal convolutions at the summit of the sensory tract and employing in the expression of the volitional product of thought the marginal convolutions which are in fibrous connexion with the motor ganglia and tract.

The theory of the mechanism of speech and thought is a modification of that of Dr. Bastian,* agreeing with it that the materials of thought are remembered impressions, and not remembered movements, and that there are definite cell-areas in the hemispherical cortex in which impressions are translated into perceptions, which may be called "perceptive centres," but differing from it in relegating to these perceptive centres, which will be situated in the marginal convolutions, only the rudimentary perceptive act, and in making the higher intellectual elaboration by which an idea is evolved the function of a new cell-area in some of the superadded convolutions upon which perceptions from various senses are converged, and in which they are combined or fused into a conception of which a word is made the symbol.

A part of the general theory is an hypothesis as to the nervous change which is the concomitant of sensation, which is taken to be absorption of the force of the impinging impression and integration of

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* *British Medical Journal*, May, 1869.

matter in the cells concerned, which may be compared to the fixing of luminous vibrations by the green cells of plants. On this view, the seat of sensation would vary in different classes of animals, and at different periods in the development of the human intellect, gradually shifting upwards from the thalami to the marginal and superadded convolutions.

Considering first the mechanism of speech, words may be regarded from two different aspects—firstly, as motor processes; and, secondly, as intellectual symbols.

As movements, they will be represented by groups of cells in the corpora striata; and the grouping of the cells, taking place under the guidance of the auditory sense, which is bilateral, will also be bilateral—that is, motor cell-groups representing articulate sounds, will be formed in both corpora striata. As the left third frontal gyrus, however, is the outlet for intellectual expression, the sound groups in the left corpus striatum will take the lead in speech, and thus, though speech is not lost in lesion of this corpus striatum, the temporary embarrassment is greater and lasts longer than in lesion of this ganglion on the right side, till the way round is opened from the left third frontal gyrus to the right corpus striatum, which will probably be by the corpus callosum and right third frontal.

As intellectual symbols, words are primarily revived auditory impressions, and are probably represented in the auditory perceptive centre by receptive cell-groups. The auditory perception of a given name will be associated with other perceptions, to which the object indicated gives origin, in the cell-area which constitutes the higher centre, and will come to stand for the resultant of these impressions generally. The way out from this higher centre is seen from pathological evidence to be the left third frontal gyrus. Words other than names are intellectual agents rather than intellectual symbols; are employed in mental action, not impressed upon the mind in association with visual and other perceptions. We can thus approximately understand how names may be forgotten while the framework of a sentence is readily uttered, or even a periphrasis invented.

The action of the hemispheres is apparently necessarily bilateral as far as the formation of rudimentary perceptions, the marginal convolutions being symmetrically associated by the corpus callosum. The unilateral employment of the left hemisphere only becomes possible in the superadded convolutions, and the unilateral education of Broca and Moxon is a motor, or rather efferent, education only.

The mechanism of thought is so far prefigured in that of language that a detailed exposition of it need not be recapitulated.

Mr. Power said that he wished to ask Dr. Broadbent one question, and that in order to make his meaning clear he would illustrate it by a diagram. An object, say a cube, was presented to a child; and the visual impression excited was communicated to the optic ganglia, by which it might be at once reflected downwards; but more commonly it was not reflected, but ascended to a higher centre. At the same time the name of the object was pronounced in the child's hearing, and the resulting auditory impression reached the auditory ganglion. If not there reflected, it likewise ascended to the higher centre. At the same

time the child touched the object, and the tactile impression followed a course similar to that of the others. The three impressions, meeting in and combined by the higher centre, occasioned the formation of the complex idea of a cube, and this, operating downwards upon the muscles of articulation, led the child to say "cube." An arrest of this process on the sensory side of the combining centre produced amnesia; an arrest on the motor side of the combining centre produced aphasia. Where, in the whole, did Dr. Broadbent place the corpus striatum?

Dr. Broadbent replied that he placed the corpus striatum between the combining centre and the muscles of articulation, as the organ by which the former acted upon the latter.

Mr. John Wood inquired how far the method of teaching the deaf to speak by watching the lips of others would harmonize with Dr. Broadbent's views.

Mr. Savory accepted the distinction drawn by the author between language and words; but objected that, on the view propounded, the mechanical act of speech was seated in centres which were comparatively more developed in the lower animals than in man. If that were so, he should expect the faculty of speech to be widely diffused among the lower animals, instead of being limited to a few birds.

Dr. Wilks expressed his general assent to the views of the author. The acquirement of language was a complex process; and might be imperfect in the sense that some of its ordinary factors might be omitted. Thus it was quite possible to learn a foreign language by sight only, so as to read it by the eye with perfect comprehension; while yet ignorant of its sounds, and unable either to speak it or to understand it when spoken.

Dr. Broadbent, in reply, said that he had located the mechanical act of speech in the corpora striata, because he regarded those bodies as the centres of muscular movement generally. Mr. Savory was mistaken in supposing that they were comparatively more developed in the lower animals than in man. Their development, throughout the animal kingdom, followed very closely that of the cerebral hemispheres, and reached its highest point in the human species.

Art. 4.—*On the Diagnosis and Complications of Scurvy.*

By Manuel Levin, M.D.

(*Gazette Médicale de Paris*, No. 49, 1871.)

The following statements are taken from a report on an epidemic of scurvy, which occurred in the military hospital of Ivry during the late siege of Paris:—

"The diagnosis is not difficult, except at the very commencement of the disease, when the patient is feverish, and complains of pains in the back and joints.

"One may regard as rheumatism what is but an attack of scurvy, but doubts are soon removed after the appearance of purpura and ecchymoses.

"The diagnosis is founded on three symptoms: subcutaneous and muscular hæmorrhages, cardiac symptoms, and softening of the gums.

"One or other of these symptoms may be wanting; hæmorrhages may even fail to manifest themselves in the skin, and be only intramuscular, and then they may consist solely in swelling of the calf and thigh.

"The scorbutic subject may present only softened gums and a cardiac bruit with the second sound and at the base without having purpura and ecchymoses on the lower limbs; or again may present softening of the gums with purpura and ecchymoses of the lower limbs with no other symptom.

"In other instances the gingival softening may be absent, the cardiac sounds be frequent, obscure, mingled or not with a blowing sound at the base with the second cardiac sound; and the integument of the legs covered with purpuric spots.

"The disease which bears the greatest resemblance to scurvy is purpura.

"According to Grisolles these two maladies are identical—purpura being the acute and scurvy the chronic form of one affection.

"Scurvy, as I have previously demonstrated, is by no means a chronic affection, and may not last longer than one month.

"It is certain that we know nothing definitely concerning purpura; so to assimilate, like Grisolles, these two affections is to judge of a question of which one of the terms is unknown to us.

"During the siege of Paris I observed cases of general dropsy associated with ecchymoses on the lower limbs. The patients were debilitated individuals.

"This dropsy commenced in the lower limbs, which were covered by ecchymoses, and then became general, the patients frequently succumbing to phthisis.

"Those cases may be mistaken for scurvy.

"What distinguishes the former, however, is the presence of albumen in the urine, which is never met with in scurvy, diminution of the albumen and fibrin of the blood, whilst in the blood of scorbutic patients these elements are found in greater quantities; and finally I have never observed tubercle in connexion with scurvy.

"*Complications.*—Scurvy does not seem to be modified by the age of the patient, or his constitution, or by the presence of diathesic affections.

"The manifestations are the same in the young and in the aged.

"It has been stated that the scrofulous constitution renders the disease more severe.

"I have had under my care several types of scrofulous subjects.

"One patient had been blind for several years in consequence of scrofulous ophthalmia, and had in the neck and front of the sternum cicatrices resulting from chronic abscesses. In this subject scurvy took its usual course, and was readily cured.

"Another patient was a young man, whose mother had died from phthisis. He suffered from a large glandular tumour in the neck, and chronic blepharitis. This patient recovered from scurvy without the development of any complications.

"I could cite many more examples.

"It seems to me that the fears expressed by the classical authors with regard to scorbutic patients tainted with scrofula have been inspired by a preconceived idea.

"The same may be stated with regard to syphilis as to scrofula.

"I have remarked, however, that so long as scurvy lasts, and until it has commenced to decline, there is a period of arrest in the manifestations of syphilis.

"In one of my syphilitic patients, towards the end of an attack of scurvy, the skin of the hands and of the soles of the feet were covered by psoriasis, mucous patches appeared around the anus, and dry mucous tubercles in great abundance on the skin."

Art. 5.—*On Scorbutic Sclerosis.*

By M. A. Legroux.

(*Gazette Hebdomadaire*, No. 43, 1871.)

In October, 1871, M. Legroux presented before the Medical Society of the hospitals of Paris a patient who afforded a good example of the sclerosis peculiar to the last stage of scurvy, and which is a remote consequence of vast subcutaneous and intermuscular blood effusions in the limbs.

The history of this patient is as follows:—He is thirty-eight years of age, of good general health, and follows the calling of porter. Up to the end of February, 1871, he had undergone, without seeming to suffer any bad effects, the privations attending the siege, the cold and the fatigues to which the mobilized national guard were exposed. At this period, however, in consequence of gradual debility, pains in both legs, and extreme apathy, he was exempted from duty. He then ceased from work, and spent his days seated upon a bench.

At the commencement of March he noticed for the first time the existence of prominent petechial spots of the colour of wine lees, which were scattered over the external and anterior surfaces of the two legs. In the course of five or six days this petechial follicular eruption became confluent, and extended from the malleoli to above the knee, and always on the external and outer surfaces. The eruption was accompanied by slight œdema of the legs. There was no fever, but weakness, with pallor of the skin, a jaundiced countenance, an increasing apathy, which, however, did not prevent him from seeking distraction without the house.

On March 12th, the earliest cutaneous ecchymosis, with effusion of blood into the thickness of the limbs, showed itself. It appeared first at the corner and middle part of the right calf, and afterwards at corresponding parts of the left calf, over an extent of from 12 to 15 centimetres. The limbs became harder and very painful. Eight days later similar ecchymosis and effusions appeared in the popliteal region. Here the swelling was very hard, the tendons of the biceps, semi-membranosus, and semi-tendinosus were enclosed in a resisting mass, in the centre of which they could be felt as stretched and immovable cords.

At this time walking caused extremely acute pain. It was only with the support of two sticks that the patient, with his body bent almost double and his legs semi-flexed upon the thighs, could proceed for a short distance. A change of position caused severe pain, and the man could not sit down or get up without assistance.

The general condition did not correspond in intensity to the local manifestations of scurvy. The debility, though great, did not prevent him from going out of the house. The tissues were pale. The patient was anæmic, free from fever, slept well, and had a good appetite, and did not suffer from vomiting, diarrhœa, palpitation of the heart, or any tendency to syncope.

At the end of the month of March pains in the gums commenced. In the course of a few days these structures were swollen, and covered by more or less abundant red fungosities, which impeded mastication. The patient was then fed on soup and bread, dipped in wine. The teeth were not affected, and soon became loose. The breath was never fœtid.

When it had arrived at this degree of intensity, the disease remained stationary for a time; the petechial eruption had then disappeared, the ecchymoses had been gradually transformed, and had left in their places a brownish and bronzed tint of the skin; the two legs were still hard and infiltrated.

From April to August the patient, being urged by necessity, endeavoured, in spite of his great debility and pain, to re-enter the service of the National Guard. He was soon exempted, on account of his affection, and he then undertook some light work, in order to gain some means. At last, in the month of June, he was employed to attend to the walls and sewers in the *Jardin des Plantes*. This occupation was little adapted for favouring the resolution of the effused scorbutic material, and after a few days the pains were as intense as ever, and the man found that he could not walk or even stand. He was then admitted into *La Pitié*, under the care of Prof. Lasègue. The following was his condition at this time:—

Face of a light brown colour; decubitus dorsal; the legs semi-flexed upon the thighs; the pulse slow, 68 to 72 in the minute; temperature normal; both legs and the posterior and inferior parts of the thigh were indurated both superficially and deeply; the integument was of a brownish tint, smooth, soft to the touch, and generally cold; pressure with the finger caused pain, and when it was prolonged and forcible left a slight depression, which disappeared slowly. It was impossible to pinch the skin between the fingers, or to make it glide over the subjacent parts, so closely was it incorporated with these. By closing the eyes one might imagine that he touched the limbs of a marble statue heated by the sun.

The most striking symptom was the considerable atrophy which the limbs had undergone. The right leg particularly was reduced, and the prominence of the calf had almost disappeared so that the limb was regularly cylindro-conical. The left leg was less atrophied at its upper part. By making comparative measurements of the circumference of the two limbs at the most contracted portions of the limbs just above the malleoli, and also round the calf, it was found that the right leg measured

39 centimetres, 6 millimetres above, and 30 centimetres 2 millimetres below; the left leg at the corresponding point measured 33 centimetres, and 35 centimetres 5 millimetres.

Around the malleoli, on each side, the skin was indurated and had lost all its suppleness and mobility. In the popliteal regions, both on the right and left sides, there was similar induration of the tissues.

Movements and locomotion were difficult. The patient experienced a sensation of tension and a peculiar constriction in the muscles of the calf when he endeavoured to flex or extend the toe. The movements of the toes were also much restricted, especially of those on the right side. Extension of the legs was painful and imperfect.

The subcutaneous venous network was invisible. The temperature of the two limbs was equal. Cutaneous sensibility to pricking and the contact of hot and cold bodies, though impaired, was yet sufficiently distinct for the patient when his eyes were covered to indicate correctly the points where he was tried, and the manner in which it was done. No sensations of formication or of numbness were experienced by the patient.

Strange to say, in spite of this induration of the tissues constricting the leg, and of the consequent obstruction of the circulation, there was no œdema of the feet or the lower portions of the limbs.

On August 24th the man presented no symptoms of scurvy, save some fungosities on the gums and ecchymosis of the palatine mucous membrane.

On October 27th, at the end of two months' treatment, there was marked amelioration. The fungosities of the gums and the ecchymosis had disappeared; and the patient's strength had been nearly restored. The movements of the legs and feet, although still restricted and attended with stiffness, were performed without pain unless too much prolonged. The atrophy of the limbs was not so marked; the left leg was softer and larger; the right leg was still small and hard, but there had been a marked improvement since the patient's admission into the hospital.

The treatment was as follows: application of compresses saturated with a concentrated solution of hydrochlorate of ammonia; alkaline baths, lemon-juice, potassio-tartrate of iron, quinine, and an abundant diet.

The following remarks were made on this case by M. Legroux.

"This case is remarkable on account of the sclerosis which existed in the lower extremities of the patient. I say sclerosis, and not scleroderma, because it was not the skin alone that was affected, and also because it is necessary to avoid confounding this condition with the lesion which characterizes true scleroderma—a special affection with a sudden commencement and progressive course, and one which ought not to be classed with various affections which have nothing in common with it save induration and retraction of the skin. None of the numerous characters of this affection are to be met with in cases of scorbutic sclerosis.

"In my patient the scurvy was remarkable in this respect: it had a very slow course, commencing in the month of February and not altogether disappearing before the month of October. It lasted then for nine months. Can this slowness be accounted for by the absence of all treatment until the month of August? I should have been inclined to

think so had I not observed that the affection was mild at its commencement and that the various manifestations succeeded each other after long intervals, instead of occurring rapidly, as is usually the case in the early weeks of the attack. This, therefore, I consider to be a mild and chronic variety of scurvy.

"I would remark that the fungosities on the gums were not produced until a long time after the first appearance of the symptoms. It was not until the 30th of March that the patient first perceived them. This, added to other cases which I have observed, proves to me how far scurvy is from being a regular affection, and that it cannot be described as a disease with rigorous periods in which the symptoms succeed each other with regularity and in a constant order.

"Effusions of blood into the deep-seated tissues at points almost always analogous in all patients, correspond to a determination set up by the patient's habits or by accidental circumstances. In the patient in question, the blood was poured out only about the ankles and on the legs and popliteal spaces. But this patient, in spite of his debility, continued to move about and to walk. Then when walking became difficult, he rested, seated on hard benches, and the posterior parts of the thighs were subjected to a pressure which was very unfavourable to the circulation; it was then that the effusions occurred in the popliteal spaces. In no other part was blood poured out. Weight in one part and pressure in the other had in this case acted as determining causes of the localization of the interstitial hæmorrhages.

"In addition, I would remark with regard to the individual predisposition to subcutaneous and deep-seated effusions, and to the prolonged induration to which these give rise, that my patient had a skin naturally fine, white, smooth, and with few hairs. I have already noticed in many cases this coincidence of a fine and delicate skin with these obstinate scleroses, and I think that we have here a condition favourable to manifestations of this kind.

"It is supposed that the sclerosis consecutive to blood effusion is caused by an infiltration of fibrine into the tissues; the blood being excessively charged with this material after having been partly absorbed, leaves behind a solid mass, which fills up the cellular spaces of the tissues. The small veins having undergone a complete or partial obliteration, present a condition which impedes and retards the absorption of the effusion.

"If in conclusion we consider the etiology of scurvy, we see that in this case the patient, who had not been exposed to excessive cold, had suffered from want of sufficient food. For a long time he had taken only broth and dry legumes. With him meat was rare. He had a mouthful only every five or six days. He did not want for wine. Every day he drank a litre or a litre and a half. He existed for a long time under these deplorable alimentary conditions, but it was only after the cessation of the investment that he became ill and that scurvy manifested itself outwardly. It is certain that if he had been treated properly in February and March, and had not with quite an Oriental indifference waited for a spontaneous cure, the course of the scurvy might have been averted."

Art. 6.—*On the Nutrition of Muscular and Pulmonary Tissues in Health and in Consumption, with Remarks on the Colloid Condition of Matter.*

By William Marcet, M.D., M.R.C.P.

(*Edinburgh Medical Journal*, February.)

The following are the conclusions given by the author as the result of his elaborate researches :—

1. Phosphoric acid and potash may be prepared artificially in the colloid state, by dialyzing a mixture of chloride of potassium and phosphate of soda.

2. Wheaten flour, potato, and rice are found to contain, respectively, nearly the same proportions of colloid phosphoric acid and colloid potash, compared to the total quantities of these substances present; and these same proportions of phosphoric acid and potash are occasionally found to exist also in blood.

3. Plants form colloid material, although they may find some ready prepared, or in process of preparation in the soil.

4. Muscular tissue in health is formed of three classes of substances: (1) Those which constitute the tissue proper; (2) Those destined to become transformed into the tissue proper, and make up for the waste; (3) Those which are in process of elimination—the first being solid and colloid, the second fluid and colloid, and the third soluble and crystalloid; the phosphoric acid and potash in the third class of substances occur precisely in the proportions required to form crystalloid pyrophosphate of potash. This is invariably true for the flesh of animals highest in the scale; but in the salmon the proportions do not quite agree with those of the above compound, which appears to show that the material in progress of elimination is somewhat less crystalloid in fishes than in the flesh of the higher animals, and this would account for an accumulation of effete matter in the salmon.

5. Blood corpuscles appear to take up albumen, phosphoric acid, and potash in the blood, and yield them in the proper proportions to muscular tissue for its nutrition; but this subject requires further investigation.

6. The nutrition of pulmonary tissue in health differs from that of muscular tissue, inasmuch as the proportion of phosphoric acid to the albumen in the tissue proper, and consequently also in the nutritive material, is much higher in the lungs than in flesh; and that of the potash in the effete material is much higher, proportionally to the phosphoric acid, in pulmonary than in muscular tissue. The excess of potash is apparently eliminated under the form of carbonate.

7. The nature of the chemical changes which take place within muscles in consumption is the same as in health, but these changes are lessened in degree, the amount of nutritive material supplied being diminished. Moreover, there appears to be in muscular tissue in phthisis a beginning of that separation of water from the solids which, under other circumstances, only occurs some time after death.

8. Muscular tissue in consumption contains more soda and chlorine than in health; in the mean proportion of 0·117 of chlorine and 0·239 of soda in health, to 0·385 of chlorine and 0·446 of soda in consumption, for 200 grammes of flesh; showing apparently that the physical power of diffusion which had been kept in abeyance in health begins to act in phthisis.

9. The pulmonary tissue in phthisis, when consolidated and softening, still undergoes a process of nutrition; but this phenomenon is different from that which occurs in health, and becomes remarkably like the nutrition of muscular tissue.

10. The pulpy state of tubercular lungs in the softening condition appears due to an altered relation between the water and solids, and not to a fatty degeneration. The diseased organs, moreover, contain less colloid and more effete or crystalloid material than in health, these several phenomena showing, as in the case of muscles, a commencement of physical change.

11. Finally, death from consumption, when not due to asphyxia from deficient action of the organs of respiration, is apparently owing to the physical power of matter overcoming the phenomena of life, the nature of which is still a mystery, physical changes actually commencing before life is extinct.

Art. 7.—*On Scrofulous Angina.**

By M. Isambert.

(*Gazette Hebdomadaire*, No. 47, 1871.)

Scrofulous disease of the throat is essentially chronic, almost indolent' and unaccompanied by glandular complications. It generally escapes observation so long as it is limited to the stage which M. Bazin calls scrofulous catarrhal angina, and of which the symptoms are these:—A gutturo-nasal voice, deafness, humming in the ears during phonation and coughing, loud snoring and choking during sleep, &c.; examination of the back of the mouth reveals hypertrophy of the tonsils, redness, tumefaction, and a granular condition of the pharynx and of the isthmus faucium. M. Isambert thinks, however, that hypertrophy of the tonsils is not always connected with the scrofulous diathesis, and M. Lasègue agrees with him. With regard to glandular angina this very often differs in no way from the follicular hypertrophies of herpetic, arthritic, or tuberculous subjects.

At last the stage is attained in which is presented a particular character which, according to M. Isambert, is special to scrofulous angina; this is a slight degree of ulceration, or only an erosion of the pharyngeal follicles. These small glands seem to be open at their summits, so as to expose a greyish-yellow and fatty-looking base. These follicular erosions may be observed on pale and anæmic mucous membranes, which are traversed only by a very fine network of capillaries. By this one may distinguish these erosions from the glandular

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* Communicated to the Société Médicale des Hôpitaux of Paris.

pustules belonging to the follicular anginæ caused by alcoholic drinks or tobacco, as the latter are always accompanied by a well-marked inflammatory redness and a varicose development of the small veins of the pharyngeal mucous membrane. In pulmonary phthisis the laryngeal affection attains its last stage; these erosions may then be observed upon a pale mucous membrane, but then the laryngeal and pulmonary phenomena, being very advanced, permit one to establish the difference in the nature of the affection. In scrofula, on the other hand, erosion of the pharyngeal follicles will appear precociously, and before severe lesions of neighbouring organs.

The veritable ulcerations of the pharyngeal mucous membrane, which are due to scrofula, are not seated particularly upon the posterior wall of the pharynx, and this is a special character. In syphilis, on the other hand, the ulcerations appear upon the velum palati, the pillars of the fauces, and the epiglottis, before invading the back of the pharynx. Scrofulous ulcerations are irregular, have sinuous edges, and an unequal and shallow base. They are free from pain. The edges of the ulcers are not undermined, nor are they everted. The mucous membrane around the ulcers is more or less healthy, but presents sometimes an hypertrophic projection of the mucous follicles. This aspect of the mucous membrane separating the ulcers is rapidly ameliorated by a few cauterizations and topical treatment, whilst the ulcers themselves persist for a very long time.

The ulcers are very often covered by yellowish mucosities sometimes mixed with pus, and very adherent. Beneath these scabs the ulcers present a yellow tissue, which resembles fat, and is slightly irregular on the surface. In contrast to these scrofulous ulcers, syphilitic mucous patches are surrounded each by an external red zone, and the centres are prominent, and of a very characteristic greyish-blue colour.

In support of the above assertions, M. Isambert gives several cases of scrofulous catarrhal angina, in which the characters just enumerated were observed.

According to his observations, M. Isambert thinks that syphilis has been too often incriminated in cases of extensive lesions of the velum palati (perforation, loss of substance, adhesions), and that it is only in instances where syphilis is engrafted upon the scrofulous diathesis that these may be produced as venereal disorders.

It is not always an easy matter to distinguish syphilitic lesions of the pharynx from scrofulous lesions, but in extreme cases the diagnosis is usually simple.

To resume: scrofulous catarrhal angina at its commencement is characterized by ulcers, the seat of predilection of which is the posterior wall of the pharynx, but these may present themselves also in the pillars of the velum palati, the opening of the Eustachian tubes, the epiglottis, and the arytenoid eminences. These ulcerations are painless, and are not accompanied by cervical adenitis. By these last characters they are clearly distinguished from syphilitic ulcers.

Moreover, scrofulous ulcers have not the opalescent reflection nor the carmine inflammatory zones of mucous patches. The scrofulous ulcer is of a yellow colour, analogous to that of cellulo-adipose tissue, and passes rapidly into normal mucous membrane. These ulcers are covered by

muco-purulent scabs, and sometimes by whitish pultaceous products. In more serious cases one finds in the pharynx a layer of grey slough, which covers all the mucous membrane, and exhales a fœtid odour. At the same time may be observed yellow pustules, acuminated like small furuncles. These malignant scrofulides may appear suddenly; still, deformities and abnormal adhesions of the velum palati which accompany them, often prove that there has been some unheeded pulmonary disturbance.

Whilst the use of mercury and iodine rapidly modifies syphilitic ulcers, this treatment aggravates scrofulous manifestations. Tonics and anti-scrofulous remedies produce at first rapid amelioration, but the ulcers are slow in closing. They are replaced by pearly-white cicatrices, arranged in lines. The adhesions of the velum, which result from their cicatrization, constitute deformities which surgery alone can remedy.

The deafness which follows scrofulous angina, and is due to obliteration of the Eustachian tube, seems to be incurable.

The complications which may supervene are hæmorrhage, erysipelas of the pharynx, and œdema of the glottis.

The previous history and the concomitant lesions will always be of great utility in the diagnosis of scrofulous and syphilitic angina.

When syphilis is mixed with scrofula it becomes very difficult to recognise the share of each of these diatheses in the local affection, each of which is aggravated by the other.

The ulcers which are due to advanced tuberculosis cannot be mistaken for those of scrofulous angina.

Herpetism, arthritism, and diphtheria never give rise to lesions which can be confounded with scrofulous angina.

Cancer and epithelioma ought not long to be confounded with scrofulous ulcers. The fœtor which the former give to the breath is permanent, whilst that caused by scrofulous angina is very rapidly relieved by treatment.

The treatment recommended by M. Isambert consists in the administration of cod-liver oil, iodide of iron and general tonics, and in the local application of tincture of iodine, either pure or opiated, or of chloride of zinc or chromic acid diluted. In cases of bleeding ulcerations the perchloride of iron may be employed. The patient may also inhale various powders, the most useful perhaps being iodoform powder mixed with lycopodium.

Art. 8.—*On the Uses of the Uvula.*

By Sir G. Duncan Gibb, Bart., M.D., LL.D.

(*The Lancet*, February 10, 1872.)

According to the action of the muscle it is an elevator; it is, moreover, a sentinel to the fauces, especially in the act of deglutition, for the moment that any substances come into contact with it, whether saliva, fluid, or alimentary bolus, it excites to action all the surrounding muscles, until it is got rid of and the passage clear. But it possesses a function of certainly not less importance in *holding the soft palate*

tense and firm in the mesial line against the wall of the pharynx during the act of deglutition itself, and thus prevents the passage upwards of any fluid or solid substance into the posterior nares.

Whilst the uvula thus has its special uses in the act of deglutition, it exerts a not less decisive influence upon the voice when uttered in a very loud tone, or in singing the higher registers, whether contralto or soprano in females, and tenor or baritone in males; *then* is its character as a *levator* or shortener clearly exerted—a use indeed that any one can readily demonstrate in his own person who has sufficient command over the muscles of his throat to allow him to see it. If this power of shortening or elevation is impaired by the removal of the whole or greater part of the free exposed *muscular* end of the uvula, then are the singing powers so seriously damaged that instances are known where a professional life has been ruined in consequence. Indeed, every true singer is instinctively afraid of any measure being performed upon the uvula that will damage the true elevating muscular power which it is so well known to possess over the soft palate in association with the levator palati muscles.

In uttering the higher singing notes with the mouth open, not only is the uvula seen to be drawn upwards, so as to become almost invisible, but the soft palate is drawn backwards and upwards, diminishing the space between its posterior border and the wall of the pharynx, so that nothing can occur to interfere with the passage of the expired air in its readiest and most conveniently harmonious manner through the mouth. The movements of the uvula are exceeding rapid, and vary with the continuous or quavering character of the singing notes; in the shakes of the notes it is seen to be undergoing a series of short *ups and downs*, and at every inspiration in singing it descends, and as rapidly ascends, and keeps up until the note, prolonged or otherwise, is finished. These observations have been confirmed by Sir Duncan Gibb over and over again upon some of the first vocalists of the day. In females who possess the very highest singing compass, the uvula and soft palate are small relatively, and so exquisite is the power over the uvular muscles that the very point can scarcely be recognised when the highest scale is reached.

On the other hand, Sir Duncan's observations upon the position of the epiglottis have shown that, if the expired air in vocalization is directed *behind* instead of in *front* of the soft palate and uvula, through pendency of the cartilage, thus diverting the course of the current of air, harmony, power, compass, and range of voice in singing are damaged most seriously. The elevating motor power of the uvula scarcely or not at all exerts itself, because the proper and natural respiratory influence is not exerted.

The uvula, therefore, besides the important functions it possesses in the act of deglutition, has also its special uses in regulating the voice, and this by no means in an unimportant manner. Here the author adds a few words upon *elongation of the uvula*. The true muscular end of the uvula very rarely indeed becomes elongated, but the terminal membranous end, containing mucous glands, and occasionally adipose tissue, does so frequently, giving rise to a set of phenomena which need not be described here. They are wholly removed by the operation

of snipping off the superfluous membranous end, and no inconvenience has followed in Sir Duncan's experience of between four and five hundred instances. It is otherwise if a portion of the muscular end of the uvula is taken away; for if a single arch now exists as a consequence from one pillar of the fauces to that of the opposite side, instead of the heretofore double arch, then is the singing voice altered, and in deglutition occasionally fluids, and even solids, get up into the posterior nares, thus proving the correctness of the views already enunciated, that one of the uses of the uvula is to hold the soft palate tense against the wall of the pharynx during the act of deglutition.

One of the effects of an elongated uvula, whether composed of membrane or muscle, is an unnatural drooping of the soft palate, which hangs upon the tongue, the power of the tensor and levator palati muscles being somewhat impaired. The constant dragging of the end of the uvula downwards in deglutition, which is continually occurring involuntarily, independently of the act of eating, is one at least of the causes of this; and that it is so is proved by the removal of the loose, flabby, membranous end, which is followed by the elevation again of the soft palate. The removal of the whole free muscular end of the uvula will not, in itself, give rise to a nasal twang in a speaking voice, however mischievous it may be to the singing voice. If a nasal twang is noticed coincidently with such a removal, it will be found to depend upon some other cause altogether.

The speaking voice is modulated by the soft palate and uvula, and the motor power of the latter is unquestionably exerted in pronouncing the letters k, q, and x, with their associations, more especially the gutturals of various languages.

The uses of the uvula may be summed up as follows:—

1. It acts as a sentinel to the fauces in exciting the act of deglutition when anything has to be swallowed.

2. It compresses the soft palate, and holds its posterior free border firmly against the wall of the pharynx in deglutition, so that nothing can pass upwards.

3. It modifies speech in the production of loud declamation and the guttural forms of language, by lessening or diminishing the pharyngo-nasal passage, when it acts as an elevator.

4. Its elevating power is increased to the most extreme degree in the highest ranges of the singing voice, and is very moderately exerted in the lower ranges.

5. Therefore in its uses, deglutition and vocalization are the functions that are intimately associated with the uvula, and both become impaired more or less if it is destroyed, wholly removed, or seriously injured.

Art. 9.—*Pathological and Therapeutical Relations of Asthma, Angina Pectoris, and Gastralgia.*

By F. E. Anstie, M.D., F.R.C.P.

(*British Medical Journal*, November 11, 1871.)

Dr. Anstie advances the proposition that asthma, angina pectoris, and gastralgia are essentially dependent on neurosis of the vagus, which is of central origin, and in a large majority of cases is mainly or entirely due to inherited peculiarities of the central nervous system.

The following is offered by him as sufficient evidence, in his judgment, to make that hypothesis exceedingly probable :—

1. Inference from the known physiological functions of the vagus.
2. Evidence of the interchangeability of asthma, angina, and gastralgia, in the same individual.
3. Evidence of the pathological connexion of these neuroses with neuralgia of the fifth nerve.
4. Evidence of the common dependence of asthma, angina, gastralgia, and neuralgia of the fifth, on peculiar inherited neurotic tendencies.
5. Evidence from the similarity of effects produced by certain remedies on all these maladies.

Art. 10.—*The Biliary Acids in Icterus.*

By E. A. Golowin, M.D.

(*Glasgow Medical Journal*, February, 1872 ; *Virchow's Archiv*, vol. iii. pt. iv.)

Dr. E. A. Golowin has found that in a few cases of jaundice, the biliary acids were absent in the urine, and in one case, to which attention is more particularly directed, the jaundice was caused by obstruction of the bile-ducts by gallstones. Some authors have tried to account for the absence of biliary acids in cases of jaundice in which biliary pigment was abundantly present in the urine, by supposing that the pigment resulted directly from changes in the blood-colouring matter, and was not at all referrible to the liver, the name hæmatogenous icterus being invented to indicate this hypothesis. The occurrence of the case of jaundice, produced by obstruction of the bile-ducts, and in which there were no biliary acids in the urine, suggested that the simple long retention of bile might act on the hepatic cells, so as to incapacitate them for forming biliary acids, while the pigment was formed as usual, and it was thought that some of the supposed cases of hæmatogenous icterus might be in this way explained. With this view the author proceeded to perform certain experiments on animals, in order to determine whether retention of bile has the effect after a time of preventing the formation of the biliary acids. A biliary fistula was first made in a dog, and this was some time afterwards ligatured, so that obstruction was produced. A short time after this latter pro-

ceeding, it was found that though the bile-pigment was abundantly present, the biliary acids were not. So that this experiment supports the idea mentioned above. The author supposes that other causes besides prolonged retention of bile may cause the non-secretion of the biliary acids, and that there is no need to invent a hæmatogenous theory to account for the phenomenon.

Art. 11.—*Epidemic of Essential Jaundice.*

By M. Decaisne.

(*Medical Times and Gazette*, February 3, 1872.)

M. Decaisne communicated to the French Academy of Medicine an interesting account of such an affection which prevailed last autumn in Paris and its environs. His personal experience relates to twenty-eight cases (occurring between Oct. 15th and Dec. 8th), seventeen being men from twenty-one to sixty-one years of age, and eleven women of from seventeen to forty-five. With the exception of five of the cases, the disease appeared in the midst of health, and without apparent cause, the icterus first affecting the sclerotica, and spreading over the body in the course of four or five days. The velum palati, in almost all the cases, was of a uniform yellow. There was no fever or diminution of appetite; no pain or tenderness whatever was experienced in the hypochondrium. Under the use of mild aperients, or even mere expectation, the affection passed away in nine or ten days. In five of the cases there was much pain in the loins, itching all over the surface, desire to vomit, and obstinate constipation—symptoms which soon yielded to mild purgatives and abstinence. The persons attacked pursued different occupations, and were placed under different hygienic conditions. Many soldiers, also, of the regiments encamped around Paris, the sanitary condition of which was excellent, also suffered just in the same way. They applied for advice, in fact, not from feeling ill, but on account of their yellow colour.

Art. 12.—*On Tympanitis and its Treatment by Puncture.**

By M. Piorry.

(*Gazette Hebdomadaire*, No. 41, 42, 1871.)

M. Piorry, in referring to a communication made on this subject by M. Fonssagrives, declares that he cannot agree with the Montpellier professor in his opinion concerning the freedom from danger of abdominal punctures in the treatment of tympanitic affections. Without speaking of the small puncture made by the trocar in the stomach

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* Communicated to the Académie de Médecine.

or intestine, a wound which in itself is not attended with much danger, he considers that an accident, the direct result of the small opening into the alimentary canal, may take place, which is very often followed by death in the course of twenty-four hours; this is the penetration of the fluids contained within the canal. What hospital physician has not seen one of these unfortunate cases in which an opening, caused by the ulceration of Peyer's patches, often so small as to be discovered only with great difficulty after death, has been followed by the passage into the peritoneal cavity of fluid material and of gas in such abundance as to distend the peritoneum to the point of preventing the descent of the diaphragm, and so putrid as to cause almost immediate poisoning of the patient?

Almost all facts and all analogies, gathered either from medicine or from surgery, seem to contra-indicate the employment of puncture practised for the purpose of remedying an extreme accumulation of gas in the intestinal tube. If indeed one could make sure practically and scientifically that adhesions existed between the parietal peritoneum and that which lines this or that part of the digestive tube, punctures performed at these adherent points would be of immense utility in cases of excessive accumulation of gas in the intestine; but unfortunately this is not the case, and probably out of the fifty successful punctures made upon the patients mentioned by M. Fonssagrives, the last forty-nine were made at a point where the peritoneum was fixed by false membranes to the alimentary tube.

It might be asked, however, if one does not exaggerate the inconvenience of the passage of gas and fluid over the surface of the peritoneum? Facts and the smallest reflection will prove that these inconveniences are great. See what happens to the peri-rectal cellular tissue when fluid and gas pass into it from an opening in the rectum. Abscesses, the pus of which is infectious, and even in which necrosis or gangrene may be declared, are widely propagated, give rise to symptoms more or less severe, and sometimes to symptoms of septicæmia. With much more reason is a similar danger to be feared from the introduction of fœtid gas into the peritoneal cavity.

With regard to man, direct facts and considerations derived from analogy, lead one then to condemn the practice of puncturing the abdomen in a very great majority of the cases of tympanitis. It has been defended by the reports of some cases in which it was successful, but no mention has been made of those cases in which death promptly followed this perilous operation.

In order to recommend the proceeding, advantage has been taken of those frequent instances in which it has been practised with success on herbivorous animals, whose abdomen was much distended by elastic fluids which had been produced from masses of badly digested barley, or by gas arising from fermenting vegetable matter, that is to say, by carbonic acid gas, which is much less dangerous than sulphuretted hydrogen as disengaged in man from animal substances contained in the alimentary canal. It is true that, in experiments made by M. Bouley on dogs, and even on horses, fatal results followed punctures of the digestive tube very much distended with gas.

In a second communication the fact insisted upon that tympanitis is

almost always secondary to some other affection, such as paralysis of the rectum, flatulent dyspepsia, stenosis, or contraction of the pylorus, or of some other part of the alimentary tube, &c. It is necessary to inquire carefully into its causes, and to treat these by appropriate means before having recourse to puncture.

Art. 13.—*On Diseases of the Œsophagus.*

By W. Hamburger, M.D.

(*Gazette Hebdomadaire*, No. 13, 1872.)

Dr. Hamburger still continues the publication of his lectures on the diseases of the œsophagus. After having established the principle of auscultation of the œsophagus, this skilful observer has now published a veritable monograph on affections of the œsophagus. In his fourth lecture he deals with ectasies or dilatations, ruptures, the formation of diverticula, and excentric hypertrophy. We cannot better prove the importance of this work than by analysing one of its parts—paralysis of the œsophagus. By paralysis of the œsophagus, Dr. Hamburger understands a condition of the muscular coat in which the energy of the muscular fibres is enfeebled or entirely lost.

Deglutition through the pharynx and œsophagus depends upon five chief factors. It is dependent: Firstly, on the the histological integrity of the muscular fibres of the pharynx and œsophagus; secondly, on the integrity of the vagi and accessory nerves, the latter furnishing the motor fibres, without which there would be no action of the muscles of the pharynx; thirdly, on the normal action of the hypoglossal and facial nerves, which animate the muscles of the tongue and velum palati; fourthly, on the conservation of the action of the glosso-pharyngeal and of the sensory fibres of the vagi nerves, which, by their sensory excitation, produce the reflex action of deglutition; fifthly, on the integrity of the nervous centres, more especially of the medulla oblongata and the superior part of the spinal cord.

The lesions observed are seated in one or more of the different organs corresponding to these factors of deglutition, and the causes of the paralysis may be referred to a morbid change of those various parts. The most ordinary cause, however, is certainly some lesion of the nerve centres, such as apoplexy, meningitis, cerebral tumours, traumatic lesions, or, finally, atrophy of the roots of the different nerves indicated as essential to deglutition. The agony in several diseases is accompanied by paralysis of the œsophagus; and, in a general manner, affections which profoundly disturb the central circulation may lead to paralysis of the œsophagus. Such are the typhoid affections which, during the stage of convalescence, necessitate the use of the œsophageal bougie. Paralysis may complicate constriction of the œsophagus; it has been observed also in lunatics who persist in their wish to be left to die from hunger. It may occur in syphilis when an exostosis is developed at the base of the cranium, or in the superior cervical region of the vertebral column. Alcoholism, diphtheria, chilling, rheumatism, traumatic shock, lead poisoning, muscular

atrophy of varied origin are so many causes of œsophageal paralysis. Among the symptoms, the author insists more especially on dysphagia, and on the phenomena revealed by auscultation.

Dysphagia presents numerous varieties, according as there may be an isolated or a compound paralysis of the œsophagus and pharynx. When the œsophagus alone is paralysed, the pharynx may, by a strong contraction, perform deglutition. In partial paralysis of the pharynx deglutition becomes very difficult, and it is impossible in complete paralysis of the pharyngeal muscles.

In the mildest cases the patient feels that the food passes slowly. Thus, small alimentary boluses are more difficult to swallow than large boluses, which, under the impulsion of the pharynx, continue their course. Fluids pass better when drank in large quantities, or when they are stimulating, as spirits. Very often the alimentary boluses, by succeeding one another, determine deglutition. When there is anæsthesia of the pharynx it becomes necessary to push onward the food with the finger in order to avoid suffocation, and when the muscles of the larynx are likewise paralysed, the obstruction to swallowing is complicated by suffocation, and the danger of the introduction of foreign bodies into the larynx.

Auscultation furnishes symptoms of the highest importance. When the muscular energy is diminished, the alimentary bolus in its intra-œsophageal course no longer presents the form of an egg, but takes a form analogous to that of a funnel, and the rapidity of deglutition is very notably diminished. On auscultation the sensation may be experienced of the passage of a more or less filiform and elongated body. This sensation may be experienced particularly when the pharynx is not paralysed, and when the bolus is promptly passed on to the œsophagus. This special bruit may be readily heard in dying patients in the so-called sonorous deglutition; but if the pharynx be paralysed, the pharyngeal gurgling can no longer be heard. By these symptoms and by the employment of the œsophageal sound a diagnosis may readily be established between paralysis and constriction of the œsophagus.

With regard to the progress of the case, it is necessary to distinguish paralysis of the œsophagus either as symptomatic or idiopathic. The latter occurs suddenly, and in most instances is temporary, but it may last for several months, and even a year. The course of symptomatic paralysis depends on the general affection, or the central or nervous lesions from which it originates.

The treatment must be guided by the recognition of causes. The paralysis in itself may be combated by various resisting means—strychnia, ergot of rye and strong doses of arnica root. Blisters along the course of the œsophagus, hypodermic injections of nux vomica, and even of strychnine have been employed. According to Monro, electricity has given good results. Employment of the sound is often an indispensable palliative means for prolonging life.

Art. 14.—*Treatment of Hyperpyrexia.*

By Hermann Weber, M.D.

(*Medical Times and Gazette*, March 31.)

At a meeting of the Clinical Society on March 8th, Dr. Hermann Weber read a paper on a "Case of Hyperpyrexia in Rheumatic Fever," successfully treated by cool baths and affusions. The patient was a youth aged sixteen, who had rheumatic fever (first attack) in August, 1871. The affection of the joints was well marked, but not excessive. The temperature of the body varied between the ninth and twelfth days of the disease from 101·6° to 102·2° Fahr.; the pulse between 98 and 118; the respirations between 20 and 24. The lungs were free, and there was only the slightest indication of a murmur with the first sound near the apex. The medicinal treatment consisted of three grains of quinine three times a day. On the morning of the thirteenth day great restlessness, vomiting, excessive micturition, involuntary motions, delirium, tendency to coma, and lividity of face supervened, simultaneously with a rise of temperature from 101·6° on the previous evening to 108·2°, of the frequency of pulse from 118 to 148, and that of respiration from 22 to 56. The patient was then placed in a bath of 71° Fahr.; and affusions of water of the same temperature were made. The mental condition and the appearance of the patient rapidly improved already during the first ten minutes, and at the termination of thirty minutes, when he was removed from the bath, the temperature in the cavity of the mouth was only 101·8°, and further sank during the next half-hour to 98·8°; while the patient fell asleep, and began to perspire freely. In the course of the same afternoon, the temperature again began to rise rapidly—*i.e.*, from 100·8° at 3 p.m. to 105·8° at 6.40 p.m. Pulse 148; respirations 38; slight delirium. The patient had then another bath with affusion, as in the morning, when the temperature further rose during the first five minutes of the bath to 106·2, but afterwards fell rapidly, the mercury receding within twenty-five minutes (the duration of the bath) to 101°, and during the following hours to 98°. After the second bath, without any farther medicinal or hydro-therapeutic treatment, the disease took the course of a usual mild form of rheumatic fever, leading to perfect recovery, leaving only a rather too long first sound. Dr. Weber repeated the view stated in a former communication to the Society: that the nature of these attacks was the same as in common heat-stroke or *insolatio:* and thought that the term hyperpyrexia, as employed by Dr. Wilson Fox, was more appropriate than heat-stroke, which conveyed the idea of causation by external heat. Acknowledging that hyperpyrexia was an accident which could occur in all febrile diseases, he maintained that it occurred infinitely more often in rheumatic fever than in any other disease; and, regarding the peculiarities of rheumatic fever, was inclined to ascribe it to the tendency to endocarditis and fibrinous deposits existing in this disease. He suggested that it might have a similar origin to chorea, and might possibly be due to minute embolism or to plugging of some small vessels

in a certain portion of the nervous system, as the hypothetical centre of animal heat and chemical changes. As to prognosis and treatment, he pointed out that all cases formerly had a fatal termination when once the temperature had reached 108° Fahr.; but that the hydro-therapeutic plan, if early and energetically pursued, and with watchfulness as to the possibility of several attacks, gave great promise of a speedy cure, as shown by the two complicated and yet successful cases published by Dr. Wilson Fox, the one by Dr. Meding, and the one by the author. Dr. Hermann Weber alluded also to a difference in the action of the cold bath in this class of cases (hyperpyrexia) and in the pyrexia of typhoid or enteric fever, typhus, and other fevers of longer duration. While in the latter the baths, when given during the height of the disease, produce only a transitory reduction of temperature, which is followed sooner or later by a fresh rise, so that three, four, or even five baths may be required on each of several successive days, in the hyperpyrexias one or two baths may be sufficient entirely and finally to remove the complex of symptoms within less than twenty-four hours. He thought that this difference in the action of the plan in question pointed to a difference in the underlying pathological causes.

Art. 15.—*On Inflammation and Fever.*

By Professor Maurice Schiff.

(*L'Imparziale*, Nos. 6, 7, 8, 9 and 10, 1871; *Gazette Hebdomadaire*, No. 6, 1872.)

Prof. Schiff in some recent lectures regarded inflammation from an unusual point of view. After an historical introduction he established that the discussion concerning the origin of inflammation and fever is actually limited to this one question: whether the nutritive disturbances in inflammation are primary, or whether disturbances of circulation are the original cause of the disturbances of nutrition. Inflammation may be considered as an alteration in nutrition, but as this alteration is in every tissue accompanied by disturbances of circulation, as these last are presented clinically as the earliest symptoms, and as the circulation is the most important support, if not the principal of the means of nutrition, it has been thought necessary to inquire whether all the phenomena of inflammation do not depend on primary disturbances of the circulation and blood-pressure.

In order to answer this question it is necessary to examine the circulatory disturbances observed in the course of phlogosis. Referring to the phenomena which may be observed microscopically in the web of the frog's foot, Prof. Schiff arranges in three series the interpretations afforded by those appearances. In the first place the initiation of the process is in the parenchyma, and the tissues possess a kind of polarizing property through which, in the normal condition, they exercise a kind of attraction for the arterial blood and repel the venous blood. The augmentation of the attraction in phlogosis would explain the initial acceleration and then the retardation and arrest of the blood current. This

doctrine was started by Vogel and still counts many supporters. But according to physiology if this theory were true one would observe simultaneously acceleration of the blood current in the arteries and retardation in the veins; on the contrary it may be seen that the phenomena of swiftness vary in the same sense in the two orders of vessels. Other pathologists, following Henle, attribute the phenomena of inflammation to a morbid change in the tissues of the vessels permitting an increased exosmosis, the primary consequence of which is compression and passive contraction leading to obliteration of the vessels, whence there results an accumulation of blood above the compressed part and consequent passive dilatation. This opinion may be readily dealt with, for sufficient exudation to explain the different phases of compression is not usually observed.

A third explanation is based upon physiology and not upon hypothesis it invokes the action of muscles and small arteries and veins to render account of all the phenomena of acceleration, retardation, and even obstruction; but though the first stages of traumatic inflammation may be thus very well comprehended, one cannot explain all the facts of inflammation. One cannot, as many observers have wished to do, recognise stasis as the primordial phenomenon of inflammation; it must rather correspond to gangrene. This opinion is contradicted by numerous facts. Thus in supposing it strictly true, it would be necessary to admit that vascular dilatation is passive and results from the *vis à tergo* of the blood current.

But Vogel has shown that this dilatation exists in the absence of any impulsion of the blood current, since in a frog's web separated from the rest of the body, and consequently deprived of circulation one may still observe under the influence of smart irritation a certain amount of constriction in the small arteries followed by dilatation.

Besides, the phenomena present a much greater complexity than one would have supposed at first; thus constriction or obstruction may be absent at the commencement; when the frog's web is irritated with acids, there is, according to Saviotti, dilatation without previous constriction. Collodion and ether act in the same manner as acids; there is dilatation first and then constriction; stasis thus coincides with constriction. Ammonia produces these two phenomena in turns and they succeed each other several times. Constriction and dilatation ought then to be regarded as independent of each other; one cannot in consequence admit the mechanical explanation which represents dilatation as the result of a peripheral obstacle.

In addition to the mechanical phenomena of dilatation and obstruction, an augmentation of the blood-pressure in all the vessels is observed in inflammation. This augmentation added to that of the rapidity of the current in the inflamed parts may even produce a venous pulse. To complete the series of observed facts it is necessary to add that the small vessels become more permeable, that they permit an increased diffusion of their contents, and that the white globules traverse the walls of these vessels. The red globules, according to Saviotti and several other observers may also pass through the walls, and Schiff also has been able to observe this phenomenon.

The preceding phenomena are constant in inflammation, but in order

to conclude that the vascular disturbances are solely the origin of the inflammatory processes, it is necessary to demonstrate that these suffice to produce the nutritive changes which are inseparable from this process.

This is the point examined by the Professor with some developments. As the blood presents an uniform composition in its entirety, one cannot conceive a general change which would produce inflammation at a single point, and it is necessary therefore to admit a local influence. A local change in the blood-pressure would not suffice to produce changes in nutrition. Experiments made by Schiff prove this last negation. In fact, this skilful physiologist ligatured all the veins save one in the limbs of cats without observing changes in nutrition, or inflammatory phenomena in the limb, the circulation of which had been so much disturbed. In addition both carotids may be tied in man and in animals without causing any disturbance in the cerebral nutrition. Abnormal blood-pressure therefore is compatible with normal nutrition; consequently pressure is not the sole factor of nutrition. Inflammation has not its origin in disturbance of the circulation. It remains therefore to find out another factor of inflammation. Recalling the remarkable experiments of Vulpian in which the tail of a tadpole separated from the body continued to live, and even presented granulations on the cut surface, Schiff adds curious facts as to the reunion of various parts entirely separated from the body for several hours; in these cases the separated part would itself help in the process of reunion, or else it would have acted as a foreign body; to resume, vegetation in the tissue may up to a certain point be independent of the circulation. Parts deprived of vessels afford proofs of this, such as the crystalline lens, which has no connexion with the circulation. The study of nerve sections on the other hand shows that changes in nutrition may be independent of circulatory disturbances; indeed nerves receive blood-vessels along their whole course, and yet if one cuts through a nerve, the sciatic for example, at its origin, one will find in the branches very important changes in nutrition, whilst the circulation in the nerve-sheath remains the same. Moreover if the roots of the sciatic nerve be cut through between the ganglion and the spinal cord, the motor fibres alone degenerate, whilst the sensory fibres remain normal, as it is the ganglion which is here the trophic centre of the sensory fibres.

This fact, so characteristic of sensory nerves, is not an exception; all tissues have a special nutritive faculty, each seeks the materials conducive to its nutrition.

To resume: nutrition is a complex function; one cannot yet appreciate the importance of the factors which concur in the general aim of nutrition, or still less decide upon the particular origin of the disturbances of nutrition observed in inflammation.

Professor Schiff hesitates to pronounce in favour of the cellular theory, as he is not aware of any direct proof of this. He has been led, however, by a general study of the facts to agree with this theory in the sense that it attributes nutritive activity to an energy inherent in every living organ.

Art. 16.—*On the Pathology of Scarlatina, and the Relation between Enteric and Scarlet Fevers.**

By John Harley, M.D., F.R.C.P.

(*Medical Times and Gazette*, Dec. 23.)

In the first portion of the communication the author treats of the morbid anatomy of scarlatina, and gives the details of twenty-eight cases of his own observation. Of these, the greater number died on days ranging consecutively from the third to the fifteenth; the remainder died on the seventeenth, twentieth, twenty-fourth, twenty-ninth, thirty-third, forty-first, and sixty-ninth days. More or less albuminoid and fatty degeneration of the kidneys existed in six of the cases, and these died on the fifteenth, seventeenth, twentieth, twenty-ninth, forty-first, and sixty-ninth days respectively; the kidneys were healthy in the remainder. The pathological changes common (with a few exceptions, depending chiefly upon the time of the decease of the patient) to all the cases are as follows.

1. *The formation of fibrinous clots in the heart and great vessels during a pyrexial condition at any period of the disease.*—This is the commonest cause of death during the early stage of the disease. It is indicated during life by the reduction, often very sudden, of a full and bounding pulse of 120 to a dribble of 150 or 160 almost imperceptible impulses; and the failure of the heart's action is commonly attended with orthopnœa and delirium from obstruction of the pulmonary and cerebral circulation. On opening the body very soon after death, before it has lost a degree of temperature, and while the blood is therefore hot and fluid, the right heart will be found distended partly with dark blood, which coagulates on exposure—and partly, sometimes chiefly, with a large, firm, white, bifid clot, continuous through the auriculo-ventricular opening. Each portion is interlaced with, and firmly adherent to, the tendinous cords and outstanding muscular bands of the cavity in which it lies; and each portion sends a rope-like prolongation into the orifice of the great vessel connected with the cavity in which it is situated—the one entering the ascending cava, and the other the pulmonary artery. These processes frequently occupy half the area of the blood-tubes, and are prolonged in ramifications corresponding to those of the blood-vessels, upwards into the cranial cavity, and laterally into the lungs. On withdrawing these partial casts of the great vessels, they may often be found nine inches long, and to have occupied vessels of the sixth and seventh degree of ramification.

2. *Marked derangement of the hepatic function.*—The bile was examined in twenty cases. In five only were the characters of the secretion normal, and in these cases death occurred on the third, fourth, twenty-fourth, forty-first, and the sixty-ninth days respectively—days probably in these particular cases too early for the development, and too late for the persistence, of any great derangement. In the remaining fifteen cases the bile was in a deteriorated condition. In two Cases, 10 and 15,

* Abstract of a paper read at a meeting of the Royal Medical and Chirurgical Society, December 12.

the gall-bladder showed decided marks of inflammatory action, the coats being injected, and the mucous membrane rose-coloured. In Case 10 there was a complete absence of bile, the mucous membrane being merely moistened with a few drops of colourless alkaline fluid. In three other cases the bile had a natural greenish-brown colour, but it was greatly deficient, as was that of the remaining ten cases, in solid matters. Thus the specific gravity in none of the thirteen cases exceeded 1014, and the amount of solid matter in 1000 grain measures in no case amounted to more than 36·4 grains, or less than one-third of the normal amount. In one case there were only 11·1 grains of solid matter in 1000 grain measures of the bile. In the majority of the cases the bile was turbid from epithelial *débris*, but on standing it became clear and transparent, and resembled pale urine. In all the thirteen cases there was a notable deficiency of biliary acids, and in two a complete absence. The colouring matter of the bile was present in every case, and as the fluid trickled over a wide surface it usually left a bright gamboge-coloured tract. The contents of the intestines agreed with this condition of the bile. If, as rarely happened, the bowel contained solid fæces, it was of a pale ochre or sulphur colour. But the fæcal matters were commonly fluid, grumous, or flocculent, often slimy, and of a pale ochre colour. Such, also, were the characters of the stools before death in many cases.

3. *General inflammation of the lymphatic glands*, usually confined to those of the neck, but occasionally extending to those of the extremities; of the spleen and mesenteric glands; and of the whole of the solitary and agminated glands of the alimentary canal, but commonly affecting only those of the fauces, and of the ileum and colon. The morbid appearances due to this general inflammation of the lymphatic system were remarkably uniform, and they were observed in every case. The tonsils and solitary glandulæ of the tongue, and the external glands of the neck, were perceptibly affected in every case. In several cases large buboes formed in the neck; in three (15, 21, and 22) these were associated with diffuse cellulitis, purulent infiltration; and in Case 22 the popliteal and axillary glands and their surrounding connective tissue were similarly affected. In these cases the glands themselves were slow to take on suppurative action, and although they were generally much enlarged and purple, comparatively few had softened centres. The spleen was enlarged in twenty-three cases, and in five of these (Nos. 9, 12, 14, 25, and 26) it was increased to nearly twice its ordinary bulk. In two others it was not examined; and in the remaining two cases (10 and 27, in which death occurred on the fifth and sixty-ninth days) it was of the normal size. The mesenteric glands were swollen and inflamed in every case. In cases 2, 6, 7, 8, 12, 19, 22, and 24, the mesentery formed a thickened, heavy, lobulated mass, and many of the glands were as large as walnuts or pigeon's eggs. In Case 13 (death on the seventh day) there was only slight swelling of the glands, whereas in Cases 26 and 28, in which death occurred on the forty-first and sixty-ninth day respectively, the enlargement still persisted. Even the small glands in the attached borders of the transverse and descending mesocola were found purple and turgid. The solitary glandulæ of the ileum were in a condition of psorentery—*i.e.*, forming white

granular and more or less hard elevations, like a thick sprinkling of large sago-grains, upon the mucous membrane—in fourteen cases. In six other cases, the solitary glandulæ were only partially affected, the swelling was more diffuse, the glandulæ being only moderately raised, but they were always deeply injected, and in some cases had an abraded appearance. In three cases, in which death occurred on the eleventh, seventeenth, and sixty-ninth days of the fever, there was only very slight swelling of a few of these glands; and in four cases, in which death occurred on the fifteenth, twenty-fourth, twenty-ninth, and thirty-third days respectively, the glandulæ were altogether unaffected. The agminated glands of the ileum were more or less swollen and inflamed in every case but one (25), that in which death happened on the thirty-third day. In Case 21 (death on the seventeenth day from suppurating buboes in the neck), there was only very slight swelling. In all the other cases the results of inflammatory action were decided, and in many cases severe. The glands were commonly raised the eighth of an inch above the surrounding mucous membrane, than which they were always more deeply injected. In the greater number of cases the difference was very striking, the mucous membrane being generally pale, and sometimes thin and bare, while the agminated glands were of a vivid red or claret colour. The inflammatory action was usually confined to the glands in the lower third of the ileum, but in three or four cases the whole of the patches from the jejunum downwards were affected. In some of the larger glands isolated foci of inflammatory action were occasionally observed. The interfollicular ridges were often the eighth of an inch wide, giving to the paler glands a spongy appearance; but these ridges were as often vascular, with fine hair-like turgid vessels, and in some cases they were prolonged into folds a quarter of an inch in length (see Cases 3, 6, 7, 8, 12, and 15, in which death occurred on the third, fourth, fifth, sixth, and ninth days). In two or three cases an almost bleeding gland had a softened abraded surface. The mucous membrane of the ileum was itself severely inflamed in two or three cases, and was covered by a thick, adherent layer of white opaque mucus. The solitary glandulæ of the large intestine were enlarged and inflamed in eight cases (Nos. 4, 6, 7, 9, 16, 17, 19, and 22). In one of these (9) there was acute desquamation of the mucous membrane of nearly the whole of the bowel. In another case (27), the cæcum was severely congested. In those of the remaining cases in which the large intestine was examined, it was quite healthy. After taking the above-described pathological conditions into one general view, it appears that there is an increase of fibrine in the blood during an attack of scarlatina, and that death is likely to occur during the first week from its deposition in the heart and great vessels; that the condition of the biliary function is such as to lead to an outbreak of diarrhœa, if this has not already happened; that a latent enteritis, sometimes general, but commonly only affecting the solitary and agminated glands, exists in a high state of development during the pyrexial stage of scarlatina, and ready to declare itself openly upon very slight provocation; that this intestinal affection is only a part of a general lymphatic inflammation which involves the whole of the lymphatic system, including the mesenteric glands and the spleen, in one common action; and, further,

that this condition may persist in some degree, either in the bowel or the mesentery, as late as the sixty-ninth day, and without any outward indication of its presence throughout. From this view one general conclusion is inevitable—viz., that the pathological changes accompanying an ordinary attack of scarlatina include all those of the first stage of enteric fever, and that the transition from one disease to another is but a natural pathological sequence, readily determined by any cause which may increase the intestinal irritation. The proofs of this interchange, or sequence, constitutes the second part of the subject, and contains accounts of the following original observations:—Case 29—Scarlatina. Convalescence on the thirteenth day. Relapse during sojourn in the hospital, with scarlet rash on the twenty-eighth day; fully-developed enteric fever on the thirty-second day; and convalescence on the fiftieth day. Case 30—Scarlatina. Convalescence on the nineteenth day. Relapse during sojourn in the hospital on the thirty-first day, followed during the next ten days by fully-developed enteric fever; convalescence on the sixty-fourth day. Case 31—Scarlatina. Convalescence on the thirteenth day. Discharged from the hospital on the twenty-third day. Supervention of enteric symptoms on the thirty-seventh day. Readmission in a typhous condition, and suffering from grave enteric fever on the fifty-eighth day; convalescence on the eighty-first day. Case 32—Severe attack of scarlatina. Convalescence on the twenty-seventh day. Slight relapse, with a trace of albumen in the urine on the thirty-second day. A second relapse on the forty-first day, followed by diarrhœa, with hæmorrhage from the bowel and pneumonia; and death on the fifty-first day. Case 33—Scarlatina. Convalescence on the twentieth day. Discharge from the hospital on the thirty-first day. Re-admission, with fully-developed enteric fever, on the fifty-sixth day; and death on the sixty-fourth day. Extensive ulceration of Peyer's patches. Case 34—Scarlatina. Convalescence on the twelfth day. Relapse during sojourn in the hospital on the twenty-seventh day. Development of enteric fever on the thirty-second day; and death on the fiftieth day. Extensive ulceration of the solitary and agminated glands. The author next gives a series of cases to illustrate the co-existence of the two diseases; and he concludes as follows:—"The intercurrence or sequence of scarlatina and enteric fever has been frequently noted, and always attributed to accidental coincidence. In my article on 'Enteric Fever' in Reynolds' System of Medicine, I have expressed my convictions on the subject; and so strong were they in favour of the natural sequence of the diseases at the time that work was publishing, that I find I have in the proof-sheet called my contagious variety of enteric fever 'abdominal scarlatina.' I abandoned the term then because it seemed to me that the evidence which I had adduced to show the close relationship implied in it was insufficient to convince those whose opportunities of examining the question in detail were rare, and whose scholastic principles, moreover, would be shocked by such confusion of two diseases which are commonly considered to be specifically distinct. Now, however, that I am enabled to lay before the Society such full and complete evidence as is contained in the preceding observations, I will submit this term to the profession as a definite description of a disease which the practitioner will occasionally

meet with. Nor will I allow this opportnnity to slip me, but, in the interests of truth, will ask my fellow-labourers to go with me one step further, and to discard those transcendental ideas of enteric fever which make of it a disease *per se*, and to open their minds to receive what nature will then soon teach them—viz., that enteric fever and all its attendant phenomena may occasionally become a part of almost any other general inflammatory condition, specific or simple.

Art. 17.—*Abstract of a Clinical Lecture on Dropsy.**

By Charles Murchison, M.D., F.R.S., Physician to St. Thomas' Hospital, and Joint Lecturer on Medicine at St. Thomas' Hospital Medical School; &c.

(*British Medical Journal*, December 23.)

After noticing the general nature of dropsy, and tracing it to the osmotic circulation constantly going on in the tissues of the body, and between the vascular system and the serous and mucous membranes, Dr. Murchison said that the causes of dropsy may be reduced to two heads—(1) excessive venous repletion, and (2) diminished exhalation in one part of the body, leading to compensatory exhalation in another. "There are some other causes," he said, "which you will find mentioned, and which may contribute to the existence of dropsy: one of these is an altered condition of the blood. No doubt this may assist in the production of dropsy, as in anæmia or hydræmia, when the blood passes more easily through the membranes than in the state of health; still, in the dropsy of anæmia, you will find the heart at fault mainly: there is a deficiency in its propelling power. There is a general impression that, in renal disease, the dropsy is due to an altered state of the blood; but I shall give you some reasons for a different conclusion—that the dropsy from kidney disease is to be explained by the second general cause which I have mentioned. Some writers speak of dropsy as sometimes having a nervous origin; and cases of dropsy, associated with paraplegia, and even with hemiplegia, have been recorded by Dr. Laycock of Edinburgh, in support of this view. But this cause of dropsy is certainly far from common. It is very important to remember the two main causes of dropsy, for the key to the whole treatment depends upon them."

Dr. Murchison then divided the forms of dropsy, from a clinical point of view, into three: 1. Partial dropsy, or dropsy limited to one part of the body throughout its course; 2. Dropsy which is first partial, but becomes general; and 3. Dropsy which is general from the first. The first form is due always to excessive venous repletion; and this overdistension of the small veins is the result of some mechanical impediment to the venous circulation. Dr. Murchison illustrated this by various examples, and called particular attention to the clinical characters of

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* Delivered at St. Thomas' Hospital on November 2nd, 1871.

the dropsy due to obstructed portal circulation; viz., the beginning of the dropsy in the abdomen: the dyspnœa following, but not preceding, the ascites; the tendency to hæmorrhoids, vomiting, and diarrhœa, or to hæmatemesis; enlarged spleen and varicose veins on the right side of the abdomen. "In the second form of dropsy, the swelling begins in the feet and proceeds upwards; and this also is due to excessive venous repletion, from obstructed venous circulation. But here the obstruction is in the central organ of circulation—most frequently mitral disease, or fatty heart, or dilated right side of heart, consequent on chronic bronchitis and emphysema. In the third form of dropsy, the swelling invades all parts of the body at once; and this is due to diminished exhalation in one part, leading to compensatory exhalation in another. This dropsy is almost invariably renal. Albumen is present in the urine. How is it that disease of the kidneys produces dropsy? On this point you will find great difference of opinion among different writers. In some works this question is rather evaded than answered; but the general view is, that in consequence of disease of the kidney, the blood becomes poisoned, and, as the result of this altered condition, the liquor sanguinis exudes. For example, Dr. Owen Rees, in the Harveian Oration a few years ago, made the remark that the retention in the blood of the urinary salts made the liquor sanguinis permeate the membranes with increased facility. But there is one very important objection to this view of the case—that, if it be correct, it is most remarkable that in the form of kidney-disease, in which of all others there is the greatest tendency to the retention of the urinary salts in the blood, there is little or no tendency to dropsy. I mean the contracted granular or gouty kidney, the peculiarity of which disease is, that the patients often die of uræmic coma and convulsions, with little or no dropsy. We must look, then, for some other cause of the dropsy. It is this: you get a diminished exhalation of water from the kidney; and hence dropsy is chiefly met with in those forms of kidney-disease in which the tubes are blocked up by diseased epithelium or inflammatory products (acute nephritis and fatty kidney)."

Dr. Murchison then made some remarks on treatment. "In the first place, one great object is to relieve venous repletion, which, in the case of portal dropsy, may be accomplished by purgatives, which cause a watery exhalation from the bowels. Another object is to remove obstructions to exhalation from the skin or kidneys by diaphoretics, warm baths, diluents, and diuretics. Thirdly, you must endeavour to stimulate compensatory exhalation from the skin and bowels. You will also find much good derived from tonics, such as iron."

Several cases in the hospital were commented upon as illustrating the above remarks, and the details were given of two cases now in the wards—viz., a case of ascites due to disease of the vessels, and a very remarkable case of general dropsy, in which there was no evidence of disease either of the kidneys or of the heart.

Art. 18.—*On the General Pathology of Virus and Virulent Affections.*

By M. Chauveau, of Lyons.

(*Gazette Hebdomadaire*, No. 42, 1871.)

"Virulent granules ought not to be regarded as animated beings. *They are simple anatomical elements, indeed hardly anatomical elements.* There is no reason for considering them in any other manner than we do the analogous elements belonging to pure inflammatory lesions. If they differ from the latter it is not in *their form* or their other external characters, but exclusively by their intimate qualities or their active properties. All these granular elements have the same origin. All proceed from the same source. All belong to the generating material which has been described by histologists as the seat of the proliferation of the anatomical elements in the pathological new formations as well as in the normal tissues and liquids of the organism. *Nothing foreign to this maternal fundamental substance of the elements of the organism exists in the virulent processes.* This, at least, results from the actual facts observed by means of plans of investigation which we have now at our disposal. This it is important that we should retain. The rest, for the time, is indifferent. Call this fundamental substance *protoplasm, germinal matter*, or *blastema;* regard it as always having a limited cellular form, or admit that it may be broken up or agglomerated in masses, the contours and limits of which remain indeterminate. These are points which it is not necessary from henceforth that we should understand in order to accept the determination of the part which the collection of facts leads us to attribute to this formative material in the theory of virulence. Agreement between us is not necessary, for the present, with regard to the question of knowing precisely to what corpuscles the virulent faculty may be attached among those which are developed in the substance of this generative material. It is in the granular bodies of the protoplasm that the virulent agents are to be met with. We will content ourselves provisionally with this general determination. Subsequently, this very solid basis will possibly allow us to advance to a more vigorous determination of virulent agents, and to a very close distinction of the corpuscles which play this important part. But we must resign ourselves to the admission that, for a time, the absence of positive facts forbids us from going beyond our present conclusion.

"This manner of considering viri is too much opposed to the current of ideas to which we have been habituated for some time not to excite some repugnance. To renounce the consideration of viri as parasites, to abandon this notion, so clear and so well defined, and above all, so seductive, concerning the nature of virulent affections, will seem hard to the host of those desirous of finality, even at the risk of finding themselves fixed in uncertainty and ignorance of scientific questions. Let these spirits be reassured, and console themselves; they will hardly be required to change their idol. To pass from the dignity of an animated

being to the rank of an anatomical element is not a very great decline in the particular case which we are investigating here. What do I say? Is there not a superiority in the majority of cases on the side of the anatomical element? Consider that of the small spherical masses of protoplasm, to which is most given the name of leucocytes. If one of these be placed under certain conditions, shall we not see it undergo the most varied changes of form, just as occurs with one of those veritable microzoonites designated as amœbæ? Not only do the various parts which compose the body displace each other in producing the changes of form, but the whole organ itself is displaced, and is transported from place to place like a veritable animalcule. It may be seen to pass into the thickness of a membrane with which it is brought in contact (Recklinghausen); and if the membrane forms the wall of a pouch containing fluid, it will even traverse this membrane, and plunge into the fluid, especially if this latter is favourable to the preservation and the life of the leucocyte (L. Lortet). Follow this leucocyte under the conditions favourable to its multiplication, and you will see it become the focus of an active proliferation, which will produce a considerable number of similar leucocytes by a proceeding very analogous to those which preside over the multiplication of certain inferior animalculæ. How many of the independent organic ferments manifest the characters of vitality with similar energy?

"In fact, anatomical elements—those at least which interest us here, that is to say, the elements which have for a fundamental basis protoplasmic material endowed with a generative faculty—comport themthemselves *in their natural medium*, the living organism, in such a fashion as to recall the manner of being of certain microzoonites. This is a point of contact from which general physiology will probably one day draw a conclusion capable of reviving the pretensions of the partisans of the views concerning parasitic viri. At this time we, in order to be logical, are compelled to put these pretensions as much as possible on one side.

"Concerning one other point the reform of the ideas which I now oppose will probably be a very difficult matter. The sharply-defined characters which the virulent elements present with regard to *quality* obstinately recur to the mind, and not less obstinately resuscitate the thought that these characters ought necessarily to correspond to the equally-marked differences in the manner of being of the *material*. Not only is one naturally indisposed to the admission that virulent material resembles inflammatory or normal material, but one is even disposed to resist the necessity of admitting the identity of objective characters in the various virulent substances. It is necessary, however, to regard the virulent element, that is, the granular protoplasm broken up or collected in a mass, as being in every part identical. Some day we may succeed in finding in the different virulent protoplasms specific characters which will differentiate them both from each other and from non-virulent material; but at the present period one must give up the discovery of any other characteristic save that which is given to them by their specific qualities.

"Besides, the identity of objective or material characters in substances or organules differing absolutely in their properties is a very common

fact in the organism. The most remarkable example of this is the ovule, the fundamental cell. If one had to select from a collection of mammalian ovules the one upon which has devolved the noble destiny of becoming the chief of the animal kingdom, he would find himself singularly embarrassed. Indeed, the human ovum, the germ of man, absolutely resembles the majority of those which give rise to subordinate creatures. Is it astonishing then that the germ of variola is not distinguishable from that of glanders or syphilis? Another and not less remarkable example is that supplied by the cells which form the original lineaments of the body of the embryo. In what do these differ from one another? and yet they become transformed into very diverse anatomical elements. Some will form nerve-cells and fibres, others muscle, &c.

"I have concluded this study of the determination of the intimate causes of virulence. Let us resume what we have established in commencing to make necessary distinctions for circumscribing and rendering precise the subject of our researches.

"Among the contagious diseases there is a numerous category of parasitic affections properly so called, due to the presence of animals or vegetables which multiply by direct generation, or by alternation of form; diseases in which the animal or vegetable acts only by causing irritation and local destruction. In these diseases, if the parasites be very small or of but a slightly aggressive nature, or if they do not attack organs of major importance, their presence may be compatible with an almost perfect state of health in cases where the number of individuals is relatively restricted, and although the affection which they cause may be mortal when they exist in considerable numbers. As examples of this we have the trichina and the parasite of the silkworm. No one would propose to admit these parasitic affections into the rank of virulent diseases.

"Another category of contagious diseases of parasitic nature composes the class of septic or septicoid affections which, in the actual state of science, ought to be considered as being produced by the rapid multiplication in the blood of proto-organic ferments, the decomposing action of which on the nutritive fluids determines a kind of poisoning more or less grave according to the species and the individual conditions of the subjects attacked. These affections may complicate the virulent diseases properly so called, but they cannot be confounded with the last in respect to their nature, although there exist between the two kinds of affections the closest relations. It is in the field of research constituted by this order of contagious diseases that the great labours of Pasteur on putrid fermentation ought to find their application.

"Finally, the last category of contagious diseases comprehends the true virulent affections, our subject of study. These diseases are distinguished from the preceding by the fact that their intimate cause, or their agent of transmission, does not present the characters of a parasitic ferment.

"When one seeks to determine this intimate cause by the study of the physiological evolution of virulent elements it will be found that the virulent activity is developed in, and confines itself strictly to the generative material or granular protoplasm of the new formations which

provokes specific irritation due to the presence of a virulent principle.

"In the humours to which this irritation gives rise, the virulent activity resides in the free granular particles proceeding from the above-mentioned generative material, and is held in suspension in the fluid.

"The virulent activity is altogether absent from the fluid portion of the humours. The plasma, or the serum in which the most virulent granular elements are present become quite inactive when they are deprived of these elements. These bodies then are the exclusive agents of virulence.

"With regard to the origin and mode of development of these agents, it may be said that the intimate cause of virulence resides in the specific properties acquired by the protoplasm of the elements which arise, and are developed on the contact of a virulent germ already endowed with these specific properties in producing similar germs."

Art. 19.—*Results of Experiments on Pyæmia.*

By J. Burdon Sanderson, M.D., F.R.S.

(*British Medical Journal*, May 11.)

At a meeting of the Pathological Society of London, May 7th, Dr. Burdon Sanderson delivered an address on this subject. He began by relating his first experiments as to the effect of inoculating the lower animals with pyæmic liquids. In the autumn of 1867, he injected the purulent liquid contained in the ankle-joint of a patient, who had died a few hours before with metastatic abscesses, general suppurative arthritis, and intense septicæmia, under the skin in a dog and two guinea-pigs. The two guinea-pigs died within short periods (fifteen and twenty days), and exhibited symptoms of great intensity. Both had metastatic abscesses; but in one the lungs were already beset with minute nodules, resembling miliary tubercles. The dog lived seven weeks. In this case there were no secondary abscesses, but miliary tubercles of the liver and spleen. From one of the guinea-pigs, two others were inoculated, of which one died of pyæmic subcutaneous abscesses, without visceral disease; the other, which lived longer, had no abscesses, but tuberculous disease of the lungs. During the same winter, other experiments of the same kind were made, all of which seemed to show that, by the inoculation of pyæmic products, two sets of lesions might be produced; as an immediate result, metastatic abscesses, accompanied by a general typhoid state, which was often fatal; as an ulterior result, either disseminated nodules, at first hard, but afterwards becoming caseous at their centres, or interstitial induration—both forms of lesion having their seat chiefly in the lungs, spleen, and liver, but also occurring in other viscera.

Having stated these facts, which he said had even in 1868 led him to regard it as probable that the two forms of infective lesions—the tuberculous and the pyæmic—were connected together etiologically and genetically, he referred to another fact which resulted from experiments made in 1871, as to the existence of bacteria in animal liquids, and the circumstances which determined their occurrence. These ex-

periments had shown that, whereas bacteria could not be shown to be present either actually or in germ in the healthy liquids or tissues, or in the products of healthy inflammation, they were present potentially in pyæmic liquids—that is to say, that, whereas ordinary pus could be kept for days or even weeks free from bacteria, provided the precautions against "spontaneous generation" were observed, pyæmic pus could not be so kept, and, moreover, possessed the properties of at once determining the development of bacteria in any suitable liquid to which it was added. At that time he had concluded, as he now knew, from insufficient observation, that pyæmic pus did not itself contain visible bacteria.

A short account was next given of certain researches made during last summer, in association with Dr. Klein, as to channels by which infective poisons were distributed from their centres of origin. Referring to the last occasion on which he had brought the subject of the intimate pathology of tubercle before the Society, and to the doctrine he had then advocated, that tuberculosis is an irritative overgrowth of a pre-existing tissue, he said it had then been shown that the process, in its disseminated or interstitial form, had its seat in a certain tissue, and this tissue had been termed adenoid or lymphatic—both words implying its intimate and special relation with the lymphatic system; but the precise anatomical nature of this relation had been imperfectly made out. No further progress was made till last May, when Dr. Klein came to England with the distinct object before him of co-operating in the investigation of this very question. The field taken up was the peritoneum; the reason of the choice being, that that membrane, and especially the omentum and diaphragm, had already been the subject of investigation, as favourite seats of tuberculosis. Those researches had not merely served to elucidate one or two anatomical facts of very great importance to the pathologist—*e.g.*, the existence of a lymphatic system in the omentum and its distribution, and the mode in which the peritoneum communicates with the lymphatic system—but had rendered it possible to give an account which, so far as the peritoneum was concerned, was tolerably exact and complete, both of the normal process of absorption and of the changes which the absorbing tissues undergo when they are entered by infective agents.

In the course of these experiments, it was found that not only as regarded the property of any given peritonitis to assume the infective character, but as regarded the intensity of the infective results and their duration, there were endless varieties. In one set of cases, the secondary lesions were suppurative, the constitutional disturbance intense, and the fatal result rapid; in another, the lesions were vascular new growths, firm at first, afterwards becoming caseous, the progress slow, and the functional disturbance imperceptible. And then it appeared that in all those instances in which the pyæmia—*i.e.*, the acute character—manifested itself, bacteria were present, not merely in the purulent liquids, but in the blood. Under these circumstances, attention was directed from the effects to the poison itself. Soon after the opening of the Brown Institution, it was found that the practice of the hospital for animals was likely to afford the required material; in short, that pyæmia occurred in dogs under circumstances very similar to those which de-

termined it in human beings; and exhibited similar symptomatical and pathological aspects. A series of experiments were therefore commenced in January last, having for their object to acquire a knowledge of the morbid poison, and particularly to discover by what conditions the variations of its intensity were governed.

With reference to these experiments, Dr. Sanderson would not anticipate the complete account of them in the Report of the Medical Officers of the Privy Council, but would confine himself to giving an acount of one series, and exhibiting the action of the pyæmic poison during life, and the post-mortem appearances; but before doing so, he would state shortly what he understood to be the signification of the term pyæmia. He then proceeded to say:—

"The word pyæmia is apt to be used in somewhat different senses, according as the person using it has before him the medical or surgical aspect of the disease. To define it completely we must, I think, take into account its mode of origin, its symptoms, and the anatomical changes which it produces; not confining our attention to either of these to the exclusion of the rest. With this consideration in view I would comprehend in my definition the following propositions.

"1. Pyæmia originates by the introduction into the living tissues, and eventually into the blood, of a *poison* which is itself a *product of inflammation.*

"2. The action of this poison manifests itself in an alteration of the blood, and in disorder of the vital functions. The former of these is characterized by the presence of bacteria, and by change in the optical characters of the blood, which often becomes obviously more transparent and darker by reflected light than it is naturally. Of the latter, viz., the general disorder of the vital functions, the most prominent phenomenon is fever, which, in the more intense forms of the affection, is followed by collapse which culminates in death.

"3. More remotely, the disease manifests itself in secondary suppurations—*i.e.*, in the formation of metastatic abscesses, which may occur either in the internal organs or underneath the skin. The special characters of these metastatic (as I am in the habit of calling them) infective abscesses are those which are well known both to surgeons and physicians. They have the additional less known character, that the pus they contain is full of bacteria.

"Pyæmia *differs* from tuberculosis in the rapidity of its progress, and in the obvious character of the anatomical changes of which it consists. Whereas by tuberculosis we are understood to mean anatomically the overgrowth of cells in certain tissues, which we designate lymphatic on account of their proved anatomical relation to the lymphatic system, the secondary inflammations of pyæmia result in the formation of infective abscesses.

"Pyæmia resembles tuberculosis in its mode of origin. Both spring from inflammations; and so far as relates to the anatomical characters of the lesions, both are inflammations. To both, therefore, the term secondary or infective inflammation is applicable.

"So much for the disease itself. Let me now," said Dr. Sanderson, "draw your attention to the nature of the poison. I wish to show (1) that every pyæmic abscess contains a poison, which, when introduced

either into the circulation or into a serous cavity, produces the symptoms of pyæmia; and (2) that we have this poison so entirely in our possession, and so far under control, that, beginning with an agent so mild in its action that it produces no marked symptoms, we can convert it into an agent of such intensity that it kills in two or three hours with the formidable symptoms seen in the case we have now before us.

"This intensification is effected by a process which may be called cultivation. Dr. Klein made the important discovery that, if a pyæmic liquid were transferred to the peritoneum of a guinea-pig, and allowed to remain there for a couple of days, although it did not at first produce any intense symptoms in the animal itself, its toxic intensity increased in such a degree that, when the transudation-liquid produced in this was injected into another animal, it had acquired the most deadly activity; and that all such extremely active liquids were crowded with bacteria of a particular character, the increased number of which seemed to be in proportion to their toxic properties."

Dr. Sanderson then proceeded to exhibit a dog, into the abdominal cavity of which six drops of a pyæmic transudation-liquid had been injected three hours before. The animal was in a state of profound collapse, accompanied with vomiting, purging, and cramps of the extremities. Shortly afterwards, the animal was killed and the abdominal cavity opened. The peritoneum contained liquid slightly stained with blood, which, on microscopical examination, was found to be crowded with bacteria. The intestines were distended with a frothy liquid, which possessed none of the characters of the natural contents which had been found in other cases to be charged with shed epithelium. The internal surface of the whole of the alimentary canal from the stomach downwards was intensely infected, and presented appearances which (as had been found by more careful investigation in previous cases) were due to the separation of the epithelium from the surface of the mucous membrane, and the infiltration of that tissue with liquid.

The material which produced these results was obtained as follows. Pus from a pyæmic abscess of spontaneous, *i.e.*, accidental, origin was introduced into the peritoneal cavity of a guinea-pig and allowed to remain there for two days. It was then withdrawn from the guinea-pig, and some of it at once injected into the peritoneum of a dog. The dog was affected in exactly the same way as the animal exhibited to the Society. The remainder of the liquid was kept for five weeks in hermetically sealed tubes, after which six drops were injected into the peritoneum of a guinea-pig; this showed its action to have become relatively feeble. After two days, the transudation-liquid produced was (on the day before the meeting) tested with a third guinea-pig and found to be extremely active. This afternoon it was injected into the peritoneum of the dog exhibited.

Dr. Sanderson then concluded by saying—"Such are the facts. The all-important question remains—Do these experiments concern us as physicians and surgeons or not? I think they do. But what I want is to prove it; for I am well aware that, unless clinical observation come in aid of pathological experiment, the results of the latter do not tell practically. Let me state what are the lines of inquiry which I desire to see taken up. The first question is—Do the characters which we

have shown to be present in the products of acute secondary inflammation in the lower animals, also exist in similar products in man? The second is more important still—Can it be shown that human pyæmic products, when tested by inoculation, possess exactly the same morbific properties as those which are possessed by the liquids to which our experiments relate? It is for answers to these inquiries that I earnestly ask the assistance of hospital surgeons.

"Finally, I would say a word as to the limits of the question now before us. With regard particularly to the question of bacteria, I desire to keep to the bare facts of disease, and not to diverge into discussions as to their origin. It is a matter to me of comparative indifference how they originate. Our observations lead us to conclude, first, that they afford a *characteristic* by which we may distinguish the products of infective inflammations from those which are not infective, and that their number affords an indication of the degree of infectiveness; and, secondly, that their presence in the blood is an indication of that constitutional disturbance which accompanies infective inflammation; not merely when that disturbance assumes the degree of intensity of which we have an example before us, but in the slighter form of irritative fever. If these facts prove to be true, not only in the lower animals but in man, their importance is quite unaffected by any theory which we may entertain as to the origin of bacteria."

The President said that the subject was a very important one. It seemed to him that Dr. Burdon Sanderson had entered upon a large area in a wise, clear, and distinct manner; and, although it might not be possible to assent entirely to his ideas, there seemed to be a clearness about the experiments. It was a striking fact that five or six drops of this peritoneal fluid should produce upon a dog the effects that had just been seen.

Dr. Crisp objected to Dr. Sanderson's conclusions respecting the identity of human and brutal diseases, and particularly to the similarity of consumption in animals and in man. As to the existence of bacteria in large quantities in the pyæmia produced by injecting peritoneal pus into another animal, he had seen them in as great number in other diseases—*e.g.*, in splenic apoplexy. The pyæmia of man occurred at a very variable time after operations and open sores; but in Dr. Sanderson's and in some similar experiments the exact time of death after injection in animals could be predicted. He therefore thought that the pyæmia of man, and the collapse produced by Dr. Sanderson, were perfectly distinct.

Dr. Bastian said that the facts brought forward by Dr. Sanderson were most important. He wished to ask Dr. Sanderson whether he saw in the blood of animals suffering from pyæmia real bacteria or only granules. In the present state of science this was a fundamental distinction. Again, the question arose, what relation did these bacteria bear to pyæmia as a disease? Were they to be regarded as causes of pyæmia or as consequences? Again, granting that bacteria existed in the blood in pyæmia, and that they were its causes, how did the contact of these bacteria cause pyæmic processes? Bacteria were constantly in communication with open wounds and mucous surfaces; they existed abundantly in the mouth and back of the throat of every individual, and

if they caused pyæmia nobody would be able to live. Then again, many experiments had been made in which fluids containing actual bacteria had been injected into animals and no disease had been produced. Dr. Bastian had injected several drops of fluid teeming with bacteria under the skin of frogs, and no disease had been produced. No one in this room, he supposed, would say that it was an habitual thing to find bacteria in the blood of persons dying of typhoid fever or rheumatic fever; and yet in both of these diseases where the temperature had been high during life, in a few hours after death bacteria had been found in abundance in the internal organs. He made a necropsy thirty-six hours after death on a case of typhoid fever dying in the University College Hospital, and found the vessels actually plugged with bacteria. How were those bacteria produced in the blood in these cases, granting that they were essential to the production of pyæmia? How was it to be supposed that the infection was brought about? On the other hand, in cases where the health suffered and where there was an open wound, there was always the likelihood of changes taking place in consequence of poisonous absorption through the wound.

Mr. Hulke asked Dr. Sanderson if he had not confounded pyæmia and septicæmia. It seemed to him that the dog suffered from the latter, and not from pyæmia. If perfectly filtered pus were injected into an animal, the ordinary symptoms of pyæmia were produced, and the animal recovered; but if the pus were unfiltered, these symptoms were produced *plus* others—such as multiple abscesses, constituting septicæmia. Any fluid, if putrescent, whether animal or vegetable, would produce the same result.

Mr. Spencer Wells asked whether Dr. Sanderson believed that the poison in this case would be physiological or chemical. There was a lady on whom he performed an operation. After he had partially opened the wound and inserted an elastic catheter, he removed an ounce of reddish fluid. This he sent to Dr. Richardson, and he prepared from it an alkaloid, one milligramme of which killed a rabbit. It had effusion into its peritoneal cavity, and a little of this killed another rabbit into which it was injected. A third was killed from the fluid from the second; and a fourth from the fluid from the third; but the fifth recovered after the injection of fluid from the fourth rabbit. The poison seemed to be like strychnine, and not due to anything like bacteria.

Dr. C. J. B. Williams thought that, as yet, no conclusion could be arrived at from Dr. Sanderson's experiments, important as they might be in themselves. He remembered a post-mortem examination in University College Hospital, after which the operator complained of a tingling and heat in his hands. The fluid in this case was examined and found to be intensely acid, and to contain many bacteria.

Dr. Murchison asked whether it were possible for pyæmia to originate in the body independently of any poison from without. On several occasions he had had the opportunity of examining the bodies of patients who had died of pyæmia following typhus fever, in which there were no ulcerated surfaces, no bed-sores, and no open wounds whatever. And yet in these pus had been deposited in the joints, under the skin, and sometimes in the internal organs. Every one who had observed epidemics of typhus fever must have seen that pyæmia followed many

cases, and that when one case had occurred in a hospital there were many—possibly from the patients being too closely crowded, &c.

Mr. Henry Lee thought that Dr. Sanderson had established clearly that the products of inflammation differed very much from those of the putrid element. This last was much more fatal than that of a spontaneously originating inflammation, and the pus of a chronic sore was much less deleterious than that of an active inflammation.

Dr. Anstie had seen all the symptoms of pyæmia produced where there was no wound whatever, and where no putrid fluid could have entered the system. He had seen cases where the only assignable cause was a cold; and there were many cases of a like kind on record. There was a second class of cases in which there had been exposure to drain-smells and impure vapours. He remembered one case coming to Westminster Hospital from a particular club-house, in which the underground premises were exceedingly unhealthy. A series of cases of a similar kind had come from the same house.

Dr. Cayley wished to know what effect the poisonous fluid had on the animal from whose abdomen it had been taken.

Dr. Sanderson replied shortly that, as regarded bacteria in general, he was well aware from his own experiments that the ordinary bacteria of putrefaction possessed no toxic action, and that liquids containing them could be injected into the circulation of living animals without result. As regarded the bacteria of pyæmic products, he had carefully guarded against the inference that they were the efficient causes of pyæmia. He regarded them only as characteristic inhabitants of infective liquids, and therefore very probably carriers of infection. As regarded the word septicæmia, he understood it to mean a state of the blood which was only present in the most intense forms of pyæmia; and he entirely agreed with Mr. Hulke in regarding metastatic abscesses as an accident rather than as an essential of pyæmic infection. The theory that the pyæmic poison was dependent on an alkaloid, would be disproved in case it should appear that it was incapable of diffusion. On this question, further inquiries were necessary.

Art. 20.—*On the Perforation of Soil Pipes by Sewer Gas as a Cause of Enteric Fever and other Diseases.*

By Andrew Fergus, M.D.

(*Glasgow Medical Journal*, February.)

As to remedial measures, Dr. Fergus suggests the following:—

1st. That all soil pipes should be carried up to the roofs of the houses, and left quite open to the external air; and, if possible, the soil pipe should also be used to carry off the rain-water from the roof. The landlords would be more than compensated for this expenditure by the increased duration of the soil pipes.

2nd. Water for domestic use should be taken from the main.

3rd. Where cisterns are still in use, a charcoal cage, to be refilled from time to time, should be placed in the overflow pipe; or, better still,

the overflow pipe might be carried to the outside of the house, and not pass into any drain.

4th. All over the city, and specially at the higher levels, the sewers should be connected with the furnaces of some of our large public works. More than three years ago Dr. Fergus proposed that this should be done, so that all the foul air from the sewers might be burned.

But all these would be mere palliatives. Dr. Fergus holds that the only true sanitary solution of the question is, that provision be made that all excreta and organic refuse shall be kept out of the sewers and water courses.

Art. 21.—*On the Prognosis and Treatment of the Consecutive Nervous Affections of Typhoid Fever.*

By Dr. H. Nothnagel, of Breslau.

(*Deutsches Archiv für klinische Medicin*, Bd. ix. 4 u. 5 Aft. 1872.)

"These affections may be arranged in three divisions, as follows:—Affections of the motor nerves, in which, however, in most cases, the sensory nerves participate; pure affections of the sensory nerves; and finally, affections of the vaso motor nerves.

"Several cases of the first class of motor paralysis and paresis are reported, the structures affected being the vocal cords, the serratus muscle, the ulnar and peroneal nerve, and, in some instances, one or more entire extremities. Cases are also given of hemiplegia and paraplegia. The affections of the motor nerves sometimes take the form of muscular tremors, spasms, and convulsions.

"The pure affections of the sensory nerves are local anæsthesia, hyperæsthesia, and neuralgia. Amaurosis and auditory disturbances frequently occur after typhoid.

"As instances of the third class of nervous affections, Dr. Nothnagel alludes to reported cases of circumscribed atrophy of the skin, with deficient nutrition of hair and nails, and of circumscribed patches produced by loss of pigment.

"The *prognosis* of the nervous sequelæ of typhoid is almost universally regarded as favourable; and in the majority of cases this view is decidedly right. Almost all these varied affections either spontaneously, or, under the influence of suitable treatment, decline in the course of weeks and months. Even complete paraplegia may be quite removed.

"Some few only of these nervous disturbances seem to attest a bad prognosis. Among these exceptions are cases of hemiplegia, which is, in almost all instances, due to deep-seated organic cerebral disease, generally apoplexy. Those few cases in which the hemiplegia is dependent on some other anatomical process are more promising.

"Those cases seem also to be unfavourable in which paralysis, even though of a single nerve, is associated with considerable impairment of nutrition; yet even here a cure may be brought about by conformable treatment. To the less favourable forms of paralysis, persistent paralysis of the vocal cords seems to belong.

"Finally, one must always seriously regard cases of impaired vision following typhoid, which has not been brought about through simple disturbance of accommodation. Experience has taught that this impairment of vision after typhoid relatively often leads to atrophy of the optic nerve.

"*Treatment.*—Experience teaches that many of the nervous affections that follow typhoid may, in the course of time, decline spontaneously and without any treatment.

"It ought to be set up as the first rule in the management of the case that the treatment should, to a great extent, be expectant, and that the practitioner, before all things, must avoid proceeding too energetically. It cannot be denied, however, that in many instances the course of the disease can be shortened by judicious and suitable treatment, and even that, under certain conditions, complete recovery can be brought about only by these means.

"In the cases of paralysis, electricity is used most frequently, and does the best service. In the cases observed by me the inductive and constant currents were used promiscuously, but most frequently the latter. The paralyses which were localized to the district of certain nerve trunks and branches were treated exclusively by electricity. I cannot say that in these cases any great difference was discovered in the two kinds of current. This experience conforms to my view concerning the nature of these paralyses as especially traumatic; since even with the ordinary traumatic paralysis, according to the observations of others as well as my own, no very noteworthy difference is to be made out between the two kinds of current, especially with regard to their influence upon the rapidity of restoration. One electrode is generally placed upon the nerve trunk or on the plexus, the other on the paralysed muscles.

"Cases of paraplegia require a treatment varied according to the probable nature of the case. If the paraplegia be regarded as due to spinal hyperæmia, or spinal meningeal apoplexy, that treatment may be first tried which in some reported cases seems to have been attended by a good and tolerably rapid result. This consists in local blood letting along the spinal column and purgation; at a later period electricity may be brought into action.

"On other occasions, when the paraplegia is considered as due to general hydræmia with serous transudation into the serous canal, a course of tonic treatment will naturally be carried out.

"If no cause of this kind can be made out, two therapeutical procedures remain: baths and electricity.

"With regard to the effects of the former I have no personal experience; for these kind of cases, however, I should think that the baths of Teplitz, Rheme, and Wiesbaden, are probably the best fitted, and occasionally the constant current.

"According to what has been stated above, cases of hemiplegia must be treated according to recognised principles, and with regard to their usual origin from cerebral hæmorrhage.

"For cases of motor irritative phenomena a successful plan of treatment has yet to be found. Here neither the inductive nor the constant current has any effect.

"To the treatment of extensive anæsthesia those general principles are

applicable which I have just given in my remarks upon paraplegia. When circumscribed anæsthesia requires special treatment, irritative ointments and the electric pencil constitute the most suitable means. For atrophy of the optic nerve there is of course no treatment.

"In some cases of neuralgia the application of the constant stream along the course of the affected nerve has a decidedly good result. With regard to cases of persistent hyperæsthesia of the feet I can give no experience of my own, and have been unable to obtain from the reports scattered throughout medical literature any decision as to a settled mode of treatment."

ART. 22.—*The Sanitary Aspect of the Sewage Question, with Remarks on a Little-noticed Cause of Typhoid Fever and other Zymotics.*

By ANDREW FERGUS, M.D.

(*Medical Press and Circular*, February 21.)

The more Dr. Fergus studied the subject the more convinced had he become that the present system of water carriage is a mistake. Its enclosed rivers and streams are in many places nothing better than cesspools, and in proof of this the condition of the Thames, the Tyne, and the Clyde was adduced. On the banks of the last-named river there are plenty of chemical works, but it was only after the rapid introduction of water-closets into Glasgow that salmon ceased to pass up the river. In Glasgow alone there are 32,500 water-closets discharging into the Clyde, and it is but a fair inference to deduce that these are the chief causes of the pollution of the river. In the author's opinion the condition of rivers loaded with organic refuse in a state of putrefaction is not injurious to health. It is only when decomposing excreta are placed in narrow passages with a limited supply of air and water, as in our cesspools and sewers, that they become so. These sewers are connected with our houses by water-closets more or less out of repair and imperfect, and with fixed basins, some of them having merely pipes passing from the water-closets to the sewers. Trapping and ventilating sewers is injurious, inasmuch that if we trap in one place we leave more to escape in another. Ventilation is not easy, and is very costly. Mr. Bazalgette estimates the ventilation of the sewers of London at 460,000*l.*, with an annual expense of 201,480*l.* for fuel, exclusive of labour. Trapping and ventilating merely dilutes the poison, and lowers the health of the surrounding inhabitants by contaminating the air. Sewage gas, always forming, is generally lighter and hotter than air, and being frequently in a state of tension, will ascend and escape at the highest point. After stating how ineffectual any present system of trapping was in preventing the escape of sewage gas into houses, and instancing various epidemic diseases originating from sewage gas, the author stated that fifteen years ago he first detected perforated

* Read at a Meeting of the Edinburgh Medico-Chirurgical Society, January 17th.

soil pipes. These perforations were generally on the upper surface of the pipe, and the pipe usually affected was the cross one leading from the closet to the main descending soil-pipe, and if there were an arch in the pipe the upper surface of the arch would be perforated. The author exhibited several specimens of perforated pipes, showing clearly that the destructive action was from within. Considering the results of chemical analysis, as well as the increased rapidity with which this action takes place in pipes not ventilated, he believed himself justified in coming to the conclusion that the perforation was due to the action of sewage gas. He found on inquiry that the same state of things exists in every water-closet town. Lead being usually employed as the material for soil-pipes, it becomes important to inquire how long a good lead soil-pipe will hold out. In unventilated pipes the duration might be stated to be about twelve years; when the pipe is carried up to the top of the house, and open to the external air, the maximum duration is from twenty to thirty years. The practical conclusion upon which the author insisted was that in any house, however well built, when cases of typhoid fever, diphtheria, &c., occur, the pipes should be thoroughly inspected, especially their upper surface, and the whole of the soil pipe uncovered. Sewer gas may also prove injurious by passing up the waste pipe of the cistern, and becoming absorbed by the water. The plan of sewage irrigation Dr. Fergus considered would not in the least improve the sanitary condition of water-closet towns. The most perfect specimen of this system was at Croydon, but experience shows that the excreta are not passed first on to the land, and that the excreta must take much longer than from four to six hours, the theoretical time allowed to pass from the closet through pipes and over meadows. Again, if sewage is pumped, in all probability the liquid will be pumped up and the gas left, as confirmed by the results of drainage works in twenty-five towns in England. The result at which he had arrived was, that all excreta should be submitted to chemical or other action, by which they shall be rendered non-putrescible. After noticing the various plans which had been suggested for meeting the whole case, it appeared to him that the apparatus devised by Mr. Hoey supplying all the comforts and conveniences of the water-closet, gets quit at once of all the nuisance and dangers of that system, and the expense of altering a water-closet to suit this apparatus would be 13*s*. The author has one fitted up in his own house, which works admirably.

Art. 23.—*On Dr. George Johnson's Theory of Cholera.*

By William Sedgwick, M.R.C.S.

(*The Lancet*, October 7, and November 11, 1871.)

In this paper Mr. Sedgwick exposes the error of Dr. Johnson's theory, and concludes with the following remarks:—

"As the chief importance of theories in disease is derived from the extent of their influence on practice, it has been necessary to notice somewhat more fully than would otherwise be the case some of the

leading errors in this particular theory of cholera, in consequence of the attempts which have been made, through the medium of the non-medical press, to popularize the cathartic treatment which has been founded on it, and which has failed to gain the approval of the medical profession. The absence of any allusion in the late publications on the Pathology and Treatment of Cholera, by Sir Thomas Watson and Dr. Johnson, to the results of this treatment at any of the metropolitan hospitals, cannot fail to be regarded as a very significant fact. For, during the last epidemic of the disease in 1866, all the cholera patients admitted into King's College Hospital were under the immediate supervision of Dr. Johnson himself, and it is well known that the statistics of treatment on this occasion, showing a mortality of about 62 per cent.,* are too unfavourable for quotation. In the University College Hospital, during the preceding epidemic of cholera in 1854, eight of the patients were treated with castor oil; but as only one survived, the treatment in consequence was changed. And the committee appointed during this epidemic by the Medical Council of the General Board of Health, to consider and report upon the treatment of cholera by castor oil, ascertained 'that in eighty-nine cases of cholera treated by fourteen different practitioners with castor oil, on the plan recommended by Dr. Johnson, sixty-eight were fatal, recovery having occurred in only fifteen cases, while the six remaining cases were still under medical treatment.'† Similar, if not even still more disastrous, results have attended this practice in India; and it would perhaps be impossible to cite a more painful illustration of the failure of the cathartic treatment of cholera than that which is derived from the experience of Dr. Macnamara,‡ who 'was acting as house-physician to King's College Hospital in 1854, when (during the decline of the epidemic) Dr. D. Johnson was treating his cholera patients on eliminative principles.' Having sailed for India 'full of confidence and hope in castor oil,' Dr. Macnamara was left, he informs us, in the following year (1855) in sole charge of a field hospital at Bhaugulpore during a severe outbreak of cholera. There he 'went boldly to work with castor oil (both among the Europeans and natives under his care); but it absolutely and completely failed, and the mortality from the disease was fearful.' Notwithstanding this unfavourable result, he again tried it on several occasions, but subsequently the 'castor oil method' was abandoned as 'worthless.' Since, therefore, the cathartic treatment, which has been founded on this theory, has signally failed, it can no longer be of any avail, in the struggle to support the theory itself, to act the part of a master of fence, or to be prematurely praised as its 'triumphant advocate;' for the victory which has been claimed was virtually lost when the showy weapons relied on for defence had been proved to be unworthy of trust, and when the skill which might have been turned to good account had been wasted on a series of subtle feints, which may, perhaps, have delayed, but which could not ultimately avert, defeat."

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* *Lancet*, November 17th, 1866, and August 19th, 1871.

† *Medical Times and Gazette*, September, 1854.

‡ "A Treatise on Asiatic Cholera," pp. 460, 461, 1870.

Art. 24.—*Treatment of Cholera by Subcutaneous Injection of Morphine.*

By John Patterson, M.D., L.R.C.S., Surgeon-Superintendent of the British Seamen's Hospital, Constantinople.

(*Medical Times and Gazette*, January 27.)

Dr. Patterson states that a recent severe epidemic in parts of Constantinople and at Hasskieu, a village on the Golden Horn, the residence of a large English colony, has given him an opportunity of trying the effect of the subcutaneous injection of morphine on a sufficiently large scale to judge of its value. The first cases were treated by the usual remedies; everything rational was tried, and with the usual want of success. Completely disheartened at the inutility of treatment, he went prepared with the instruments and morphine, and after consultation with his colleague, Dr. Werry, determined to give it a trial. A most unpromising case was selected. The man had been previously suffering from inflammation of the liver, was in deep collapse, pulseless, with rice water purging, severe vomiting, and cramps. Dr. Patterson injected a quarter of a grain of acetate of morphine. The result was beyond his expectations. In a quarter of an hour the cramps and vomiting ceased, the patient fell asleep, the skin gradually became warm and moist, the pulse returned. In two hours he awoke, and said he felt much better. The injection was repeated; he again slept for three hours. The reaction was perfect. He lived three weeks, and sank from typhoid exhaustion, as much produced by his old liver complaint as from the reactionary fever. The same good results followed in almost every case in which it was tried. In ordinary cases one or two injections of from one-quarter to one-half of a grain sufficed. In a few cases three injections were given, and only twice has Dr. Patterson had occasion to give four. It was given even to very young children, in doses proportioned to their age and condition. In the milder form, where the purging, vomiting, and cramps were severe, and collapse just commencing, he never wasted time on other treatment. An injection of a quarter of a grain was given, perfect quiet enjoined, and bottles of hot water placed in the bed. The patient fell asleep and, as a rule, awoke nearly well. Many cases were thus nipped in the bud. Dr. Patterson does not, of course, maintain that this treatment is a specific against cholera; he only claims for it that its action is more decided than any other treatment he has seen or practised, and that in the race against death we gain time for further treatment when it is necessary. It is long since Dr. Patterson lost hope of the ordinary treatment influencing much the course of the disease, and, after treating more than a thousand cases at various times of epidemic, he is glad to report that this has really been of great service. His colleague, Dr. Werry, speaks equally favourably of the results obtained in his practice. Dr. Patterson regrets that want of time prevents him at present from giving the cases in detail; but the subjoined table gives at a glance the main results:—

	Number of Cases.		Recovered.		Dead.
Treated in the usual manner . .	10	...	1	...	9
Treated by morphine injections . .	42	...	22	...	20
Total	52	...	23	...	29

But of the cases treated by injection, 8 were perfectly helpless from the first, being *in articulo mortis*, one had severe liver complaint, and one was far advanced in consumption; so that, in reality, they had 32 cases where the treatment had a fair chance, reducing the mortality to 10 in 32; and of these 10, one was 60 years of age, one within a few days of her confinement, and three hard drinkers.

In reference to the subject of cholera, Dr. Patterson states that he is engaged in a series of experiments on animals, the result of which he hopes soon to communicate. So far as he has subjected dogs to the action of cholera-matter from the human subject, as by injections under the skin, into the rectum, and feeding them with food sprinkled freely with cholera dejections, none but negative results have been obtained.

Art. 25.—*On "Kidinga Pepo."*

By James Christie, M.D., Physician to H.H. the Sultan of Zanzibar.

(*The Lancet*, February 17.)

At a meeting of the Epidemiological Society, on January 10th, a communication was read from Dr. James Christie, physician to H.H. the Sultan of Zanzibar, on "Kidinga Pepo," a peculiar form of exanthematous disease epidemic in Zanzibar, East Coast of Africa, from July, 1870, till January, 1871. This fever sprang up after the complete disappearance of cholera, and was recognised by the old inhabitants as identical with one which appeared as an epidemic on the East Coast of Africa about forty-eight years ago. It was quite unknown to the natives of India, from Bombay and Scinde, resident in Zanzibar; but the Arabs from Hadramaut, on the Gulf of Arabia, were familiar with it. The name "Kidinga Pepo" means cramp-like pains, produced through the agency of an evil spirit. This disease resembles in its most important symptoms "dengue," or scarlatina rheumatica. The patient was seized very suddenly with pain and stiffness of the muscles, especially those of the palms of the hands and soles of the feet; fever followed, varying greatly in intensity. The skin became hot and dry, the tongue red and spotted, but generally clean, the face of a bright-scarlet colour. This coloration was marked in every case, and usually accompanied by a puffy swelling so as to imitate erysipelas of the face; it was characteristic of the disease. There also occurred swelling and pain of the smaller articulations, besides much pain in the shoulders, back, &c. These symptoms were accompanied by very obstinate constipation. This first period of forty-eight hours was followed by a very

complete remission of from two to three days. The fever returned on the fourth day, always with lessened intensity; on the fifth an exanthematous eruption, different from that of measles, of rubeola, and of scarlet fever, and more like that of erysipelas, appeared and spread over the whole body in forty-eight hours. Then occurred swelling of the lymphatic glands of the head and face, and especially of the occipital glands; redness and even tumefaction and rawness of the mucous membranes of the nose, mouth, and, in severe cases, of the throat. During this time the stiffness of the muscles and pain of the articulations continued, and on the seventh or eighth day there was desquamation of the cuticle, and the acute stage terminated. Dr. Christie considers that this disease differs from "dengue" in several particulars: the swelling of the lymphatic glands did not occur until the third stage of fever; the eruption was invariable in form, and, as described, unlike that of dengue, which presents many varieties; the implication of the mucous membrane of the mouth and throat; and the articular pains were to a greater or less extent invariably present, except where there had been previously attacks of malarious fever, sunstroke, &c. The symptoms and course of the disease were remarkably invariable and characteristic. The sequelæ of "Kidinga Pepo" were much more severe than those of "dengue"; the muscular pains may continue for months; and Dr. Christie himself, who was the first European attacked, suffered severely for two months afterwards. These chronic pains affected especially the shoulder, wrist, and ankle joints; and, in addition to them, there was chronic tenderness of the superficial lymphatics. The disease appeared to be communicable, the members of a household being usually attacked one after another. "The Europeans suffered much more acutely than the natives, and very few escaped an attack. In no case did the disease recur in an acute form, and there were no fatal cases either among children or adults." The disease was treated during the first day with purgatives and five-grain doses of quinine. On the remission of the fever iodide of potassium in four-grain doses was administered with the most marked effect on the articular pains. Dr. Christie says, "I know of no medicine more entitled to the name of a specific than the iodide, its effects in subduing the disease being more marked than those of quinine in the treatment of malarious fever."

Art. 26.—*The Warm Bath in Smallpox.*

By William Stokes, M.D., Regius Professor of Physic in the University of Dublin.

(*Dublin Journal of Medical Science*, January 1.)

In some notes on the treatment of smallpox Dr. Stokes lays great stress upon the use of the warm bath. He says: "We cannot doubt that the mortality in smallpox hospitals would be greatly diminished by the use of the bath." He describes a case in which the pustulation was almost universally confluent; the purulent matter highly putrescent; the hemorrhagic state developed; the body one universal ulcerous sore,

and the blackness of the worst purpura developed; the odour of an intensely pungent and offensive character, which seemed to pass through the bystander like a sword. "Stimulants alone, freely and constantly employed, seemed to preserve the patient alive. The pulse was rapid, weak, and intermitting; and for several days we despaired of his life. At this juncture I happened to describe the case to my colleague, Mr. Smyly, who suggested the trial of the warm bath, with the view of relieving the terrible suffering. A bath in which he could recline was speedily procured; and, pillows being adjusted in it, we lifted the sufferer in, and placed him in the recumbent position. The effect was instantaneous and marvellous. The delirium ceased as if by magic; it was the delirium of pain, and the patient exclaimed, 'Thank God! thank God: I am in heaven! I am in heaven! Why didn't you do this before?' The fetor immediately and completely disappeared, so that, on entering the ward, no one could suppose that there was a case of smallpox in it. He was kept at least seven hours in the bath, during which time brandy was freely administered, and omitted only when it showed symptoms of disagreeing with the brain. He was then removed to bed. The surface was clean, and in many places the sores looked healthy and white. The bath was repeated next day, after which he fell, for the first time, into a tranquil slumber. From this time his recovery was progressive, delayed only by the formation of abscesses and the great soreness of the feet. That this gentleman's life would have been sacrificed but for the timely use of the bath, few who have had any experience in prognosis can reasonably doubt. He was in the condition of a patient every portion of whose skin had been burnt and ulcerated. . . . . This case and its singular result, in addition to the experience of Hebra, justifies the recommendation of the use of the bath. No danger attends its employment; and, in asthenic cases, stimulants can be freely used.' In the Vienna Hospital patients have been kept continuously in the bath for one hundred hours with good effect."

Art. 27.—*Antiseptic Treatment of Smallpox.*

By Arthur Wynne Foot, M.D.

(*Medical Times and Gazette*, April 6.)

Dr. Foot, of the Meath Hospital, has recently communicated a paper to the Medical Society of the College of Physicians, Dublin, during their discussion of the subject of smallpox. The ordinary plan of dealing with smallpox, as with most other diseases which run a course, is to let it alone, to treat symptoms as they arise, and to ward off evil effects should they make their appearance. In the ordinary sense of the word this is not treatment at all, and we are by no means sure that it is sound in principle. At all events, Dr. Foot has attempted, with a certain degree of success, to apply a system which has been attended with good results in surgery to a loathsome disorder, and one of extreme severity. We are happy to make his ideas and his system more widely known than they now are, and we hope that others will test both, so that we may know their true value.

The total number of patients treated was fifty-nine; but these were so carefully studied that their value is much greater than a multitude less closely observed. Of the fifty-nine twenty-four were confluent and six semi-confluent, and out of these eleven died—a mortality of more than one-third. But it must be remembered that confluent smallpox in a severe epidemic is an extremely fatal malady, its fatality amounting to quite 50 per cent.; moreover, the cases treated were in badly-fed patients, brought late to hospital, some unvaccinated—in short, a most unpromising series. Dr. Foot says—

"The way in which I endeavoured to carry out the antiseptic treatment was by giving carbolic acid internally in the shape of the sulpho-carbolate of sodium, and when more suitable the sulpho-carbolate of iron, giving the sulphurous acid of the Pharmacopœia, diluted with water, as the usual drink, using gargles of sulphurous acid, spraying the larynx with it, washing the nares and upper surface of the soft palate with solutions of sulphurous or of carbolic acid, keeping carbolic oil to the face, washing the body with solutions of sulphurous acid or vinegar and water, throwing pure sulphurous acid about the bed and bedclothes of the patient, and burning sulphur in the room, so that the sick might breathe, for some portion at least of the day, an atmosphere charged with some sulphurous acid gas in it.

"After much consideration of the subject I have adopted the opinion that the secondary fever of confluent and semi-confluent cases is due to the presence in the body of products of decomposition, which commence to be formed as soon as the lymphy contents of the hitherto vesicles become purulent, rather than that it results from the dermatitis which springs into existence at that period, and which I consider to be the necessary consequence of the irritation of the now numerous sub-epidermic abscesses; and believing that in carbolic acid, used both externally and internally, there is an agent capable, when it can get fair play, of checking the decomposition of the pus, or of paralysing the effects of the products of its decomposition, I considered the first thing was to ascertain the best mode of its administration.

"I have given the sulpho-carbolate of sodium in thirty-four cases of small-pox, in doses of from seven grains occasionally, to sixty grains every third hour; it is very soluble, and can be taken in plain water, or if its earthy-saline taste must be disguised, it can be given in some infusion of orange-peel or of cascarilla. During its administration carbolic acid is eliminated by the lungs, its odour being very perceptible in the breath, and the sulphuric acid and soda pass off by the kidneys. I have not observed it to cause any sickness of the stomach or unpleasant feeling in the head, even in very large doses; children have no objection to it. I have also verified the observations of Dr. Sansom, that subsequent to its administration the fetor of the evacuations from the bowels is greatly lessened, the urine is unusually slow to decompose, and the flesh resists putrefaction. I had opportunities of remarking the latter fact in making post-mortem examinations. I never found anyone to complain of the usually nauseous variolous odour of the skin.

"At the same time, in all confluent, and semi-confluent cases I use sulphurous acid in every form and way in which it can be applied.

"One of the simplest and most effective ways of exhibiting sulphurous

acid is in the gaseous form; flowers of sulphur dropped on a heated shovel and carried about the room with its pale blue flame, forms by its combustion sulphurous acid gas, which, diluted with the nitrogen of the atmosphere, can pass into the lungs of the patients; and I consider that there is reason to believe that this practice three or four times a day is beneficial to the attendants and other inhabitants of the house as a prophylactic. Irritation of the bronchial membrane soon gives notice when there is as much sulphurous acid gas in the atmosphere of the room as is consistent with health; it specially and soonest affects any one with bronchitis, and I should say it ought to be used very carefully if the variolous patient were labouring under that affection. One of the nurses at the hospital who suffered from chronic bronchitis used to be greatly affected by the daily fumigations, if in the rooms when it was being done, and used to feel its effects long before and long after any of the patients or other attendants. Some persons in health also have by idiosyncrasy a condition of the lining membrane of the air-passages which makes them peculiarly sensitive to this gas, even in a very much diluted form, and in such a reflex cough is very quickly excited. It is not to be supposed that the principal object in burning sulphur is to disinfect the room—this is an after consideration, and would require an amount of sulphurous acid gas dangerous if not fatal to life; but it is to develope as much of this antiseptic agent as may be safely inspired, with the view of checking the multiplication of the small-pox poison in the person of the patient, very minute quantities of sulphurous acid being capable of arresting fermentation.

"The sulphurous acid of the Pharmacopœia undiluted I frequently apply in an atomised vapour to the nares and pharynx, through vulcanite tubes, curved or straight as may be required, in the manner recommended by Dr. Dewar, of Fifeshire. I have found that patients like it, and eagerly ask to have the operation repeated. It removes disagreeable tastes from the mouth, keeps the nose free from obstruction by accumulated crusts, and much of it must reach the lungs. A few whiffs open the nose when it is stuffed, or when, as hospital patients say, the head is stopped; the spray has not the suffocating odour of the bottled acid.

"I give them the acid internally several times in the day, or for a drink both day and night when there is much thirst, in drachm or two-drachm doses at a time, diluted with water. One drachm of the acid in two wineglassfuls of iced water is a very pleasant drink. Less water may be used—a drachm may be taken in a wineglassful of water; but if the acid has been freshly prepared, or very well kept, the drinking such a solution may catch the breath. If the person drinking the acid in the strength of one drachm to two ounces of water will avoid inspiring through the nose when the glass is brought to the lips, and swallow the liquid in gulps, the vapour cannot irritate the air-passages. I always have the acid added to the water which the confluent and semi-confluent cases drink, and they like its acidity very much. I frequently take it myself as an agreeable and wholesome beverage, and advise the students to do so, as a prophylactic. I prefer the sulphurous acid to the sulphites or bisulphites, because they are so unstable in solution—the form in which they must be given—rapidly absorbing oxygen, and passing to

the state of sulphates. Neither have they much to recommend them in preference to sulphurous acid on the score of cheapness, purity, or flavour."

Of the complications which may arise in confluent smallpox, and which add so much to its danger, Dr. Foot enumerates four—laryngitis, delirium, hæmorrhage, and albuminuria. Of the first he says—

"Laryngitis in some degree is an almost inevitable event in confluent variola, and is, perhaps, usually the most frequent immediate cause of death. I have endeavoured in all severe cases of variola to anticipate this event—this I think is the way to combat it; but if the case is not got in time, of course this plan is out of the question. When I have had an opportunity of treating a case from the commencement, or from an early period, upon the very first complaint of any kind about the throat—and sometimes the answer to the constant inquiry will be only a 'queer feeling' in the neck—I surround the neck with cotton-wool, spray the larynx and pharynx with a saturated solution of tannic acid, give ice and mop the throat with glycerine of tannin. I afterwards, when necessary, apply leeches freely to the neighbourhood of the thyroid cartilage, followed by poultices and hot sponges. I also use sprays of solution of carbolic acid, five minims to the ounce, solution of sulphite of soda, sixty grains to the ounce, or the sulphurous acid B.P. undiluted. Of any single remedy ice has certainly given the most relief in laryngeal complications, and has been in almost constant use night and day, in the smallpox wards; the swallowing of the melted ice also relieves the salivation and dysphagia resulting from the irritated mouth and pharynx, and next to ice the patients seemed to like, from its immediate though often only temporary relief, the spray of carbolic acid, especially when sent through the nose, and followed by a stream of water."

Delirium, Dr. Foot thinks, is mainly due to habits of previous intemperance, and so allied to one form of delirium traumaticum commonly called delirium tremens. In these stimulants were the most useful remedies; chloral and opium did no good.

There was only one case of hæmorrhagic smallpox, and of this the patient died. Albuminuria occurred in three, and these died.

As regards the face, Dr. Foot thinks the treatment given above as important as local applications, but he takes advantage of these, too, by keeping carbolic oil on it from the first in varying strength, from one to three or one to seven of oil, hiding the smell, if objected to, by origanum. This he thinks does good.

Dr. Foot notes that with the sulpho-carbolates the urine is commonly blackened; but this, he says, is not due to the presence of blood. Furthermore, he remarks that he has always given sulphurous acid along with the sulpho-carbolates, his object being to cure his patient, not to experiment with drugs.

The use of antiseptic remedies in such a disease cannot be made out by one series of experiments, but in the hands of Dr. Foot they have at least proved so useful as to amply merit further trial. Dr. Hudson's experience has also been highly favourable.

Art. 28.—*Balsam of Copaiba in Smallpox and Scarlatina.*

By A. Rowand, M.D., Visiting Physician and Surgeon to the Marine and Emigrant Hospital, &c., Quebec.

(*Medical Times and Gazette*, February 17.)

From our knowledge of the effects of the balsam on the skin and mucous membranes, Dr. Rowand was induced to try it, in four or five-drop doses, mixed in ʒij syrup, and ʒij mucilage of gum arabic, three or four times a day, in the confluent smallpox of a person who had never been vaccinated. It caused no nausea, but, on the contrary, created a keen appetite, which continued till recovery. No pitting took place, and no local application was used but glycerine and water. Dr. Rowand tried the same mixture in scarlet fever, with most satisfactory results. Under its use, the tongue and sorethroat got rapidly clean and well, followed by a keen appetite, and by none of the usual sequelæ. The secretion of urine was copious, and began to increase in quantity after two or three doses. At first it was of the colour of ale and a little ropy, but by the third day quite clear and normal. The author's theory of the action of the remedy is, that it alters or destroys the character of the virus, and eliminates it out of the system by the skin and kidneys more particularly; for the recoveries have been unusually rapid. In both cases Dr. Rowand prescribed milk, beef-tea, wine, and spirits, according to need.

Art. 29.—*Hæmorrhagic Smallpox associated with Tetanus.*

Under the care of Dr. Gayton, at the Homerton Small-Pox Asylum.

(*The Lancet*, February 10.)

The following case presents features of unusual character, both as regards the tetanoid symptom and the amount and character of the eruption. It reads almost like a case of cerebro-spinal meningitis, and had it occurred at Dublin in 1866, instead of at London in 1872, it would in all probability have been so designated.

C. O——, aged seventeen, an errand-boy, was admitted on the evening of January 6th. The patient was quite well until the 3rd of January, when he complained of shivering and headache. On admission, there were a few variolous papules on the face, trunk, and extremities, of a dark hæmorrhagic character, with numerous dark-purple spots on various parts of the body. He was completely unconscious; the mouth widely open; the face distorted; and the pupils dilated, the left more than the right. He was constantly shouting out, but no answer could be obtained to any question. He lay upon his left side with his legs drawn up; and when placed on his back he rested upon the occiput and the heels, the body representing a complete arch. Fluid introduced into the mouth was rejected through the nostrils. Pulse 120; lungs clear. Pressure upon the neck by pinching produced no effect. Swal-

lowing being impossible, enemata of beef-tea, &c., were given; and small doses of chloral hydrate produced slight relaxation of the muscular contraction, but otherwise did not appear to do any good. The patient remained in this condition until the afternoon of Jan. 8th, when he died.

Post-mortem examination—On removing the calvaria, considerable difficulty was experienced owing to the firm adhesion of the dura mater. The brain was deeply congested over its whole surface, and appeared softer than natural. No fluid was found in the ventricles. On the under surface of the pons Varolii, extending along the under surface of the medulla oblongata (where it abruptly ended), was a thickish layer of concrete pus. On the posterior surface of the medulla oblongata there was a similar layer of pus, which appeared to end at the junction of the medulla oblongata with the cord, the superior two inches of which were free from exudation; but, with this exception, the posterior surface of the cord throughout its entire length was covered with an exudation like that already described. The cauda equina was infiltrated with fluid pus. The anterior surface of the cord was quite free from exudation; the cord itself was considerably congested. On examination by the microscope, numerous cells were seen; these cells were full of granules, which disappeared on the addition of acetic acid. No change was observed in the nerve-cells.

SECT. II.—SPECIAL QUESTIONS IN MEDICINE.

(A) CONCERNING THE NERVOUS SYSTEM.

ART. 30.—*On the Temperature in Certain Affections of the Nervous System, and especially in Tetanus.**

By JOHN W. OGLE, M.D., F.R.C.S.

(*Medical Times and Gazette*, January 20.)

Dr. Ogle first alluded to a case of traumatic tetanus which he had described to the Clinical Society the previous session (which had recovered under the use of chloral, belladonna, wine, ice to the spine, etc.), and which had exhibited tolerably regular or periodic daily variations of a remarkable kind in the heat of the body—variations not corresponding by any means with pyrexia, with any rise in the frequency of respiration or of the pulse, and having no apparent relation to the food taken, the degree of sweating, or the amount or force of muscular spasm. He then described other cases of tetanus in which the evening temperature had been found to be remarkably high compared with that of the morning. Of these, one was a case which had received from Dr. Keen of Philadelphia, in which, out of fifteen days that the temperature was taken, there were nine in which the evening temperature was much

* Read at a Meeting of the Clinical Society of London, on January 12th.

higher than that of the morning, being in several instances more than $1\frac{1}{2}^{\circ}$ and in some cases 2° higher; the pulse being the while often as low as 60 per minute. A second case was one sent to him by Mr. Dixon of Preston, in which, during six days that the temperature was taken, there was a great evening increase of temperature over that of the morning, being on one occasion nearly 3° higher. A third case was one recently published by Mr. Poland; and a fourth one published by Mr. Croft in the *Lancet* for 4th November last. Dr. Ogle did not consider that the great nightly exaltation of temperature was attributable to remedial agents used, though he recognised the fact that certain agents notably affected temperature, and quoted numerous instances in which it had been demonstrated experimentally both on man and animals, that temperature could be both increased and diminished, instancing (and giving authorities) the decrease of temperature from chloral, bromide of potassium, quinine, digitalis, alcohol, mercury, lead, etc., and quoting experiments in which nicotine, curare, strychnia, nux vomica, veratria, quinine, and phosphorus were injected into the veins of animals. Examination of the results of such experiments and trials showed very great diversity and discrepancy, and Dr. Ogle suggested that research into the action of agents (both in health and disease) in modifying temperature might well and fitly be undertaken by the Clinical Society, and would prove a field worthy in every way of their cultivation. He alluded to observations which his friend, Dr. Fox, of Clifton, was engaged in on this subject. Referring to the modifications of temperature of tetanus, and to the possibility of the existence of variations in these modifications, according to the character and nature of the tetanic attack, Dr. Ogle remarked that it would be a question whether such variations have any relation to vascular changes in the spinal cord, or to such textural changes in the central nervous system as have been observed in certain fatal cases of this disease by Rokitansky, Wedl, Wagner, Demme, Fleckner, Eisenmann, Oppolzer, Wunderlich, and more recently Clarke and Dickinson. Dr. Ogle said that he thought it was a matter of consideration how far such histological changes were due to vascular congestions or to increased blood-temperature induced in the course of the disease. In connexion with the high temperature of tetanus, he alluded to the views which had lately been promulgated, especially in Germany, as to the condition termed fever—a condition which was supposed to result from an unwonted state of the central nervous system, by Wunderlich, Virchow, and many others. He specially drew attention to the researches of Tscheschichin, who looked on fever as the result of a morbidly increased activity of the spinal centres in consequence of a weakening or paralysis of the moderating portions of the brain, by which a number of chemical processes are increased to an extent which is never attained under normal conditions of the functions of the brain. He observed that, whatever part the central portions of the nervous system may play in the increase of temperature in disease, we must, of course, allow that the vasal nerves, as well those which contract the vessels as those which actively dilate them (if such there be), are intimately concerned, and that an arrest of the natural loss of heat by radiation may lead, by causing its accumulation, to an increase of general temperature as much as an actually and

positively increased production of heat. Dr. Ogle then alluded to other cases ordinarily looked on as non-pyrexial, in which the evening temperature was very much higher than that of the morning; for example, those of diabetes, published by Dr. Foster, of Birmingham. (The examination of temperature in cases of diabetes by himself had given different results.) It was to be remembered that in many cases of diabetes the central nerve-structures were at fault. He alluded to cases of meningitis in which the exceedingly high temperature was noted; one noticed by Dr. Bradbury of Cambridge; also two cases of general paralysis of the insane, for which he was indebted to Dr. Mickle of the Derby Asylum; and finally, to a probably exceptional case of chorea which he had lately treated, and in which the temperature for twenty-one days was noted morning and evening, the latter being almost always much higher than the former. Dr. Ogle referred to the great importance which the thermometer, as supplying a measure of expenditure of nerve-force and tissue waste, was assuming in our clinical wards, thus competing with the stethoscope, microscope, and test-tube. He hoped shortly to have the opportunity of offering to the Society some remarks on the temperature of the body in paralysis.

ART. 31.—*On the Pathology and Treatment of Neuralgia and its kindred Disorders.**

By JOHN CHAPMAN, M.D., M.R.C.P.

(*The Lancet*, February 3.)

Dr. Chapman arranged the whole class of neuralgias into six groups, as follows:—1st. Those cases in which there is apparently no complication of any kind, and in which the pain, having no obvious cause, is referred to some part of the periphery, seemingly healthy. 2nd. Those cases which, though marked by the absence of any morbid phenomena at the seat of pain, yet have an obvious or assignable eccentric cause, the pain being referred either to the seat of cause, or to some part of the periphery more or less remote from it. 3rd. Cases distinguished by morbid phenomena of the voluntary muscular system, chiefly, but not necessarily at the seat of pain. These phenomena consist of cramps or tonic spasms, twitches, jerks, and other convulsive movements. 4th. Cases presenting, besides the pain and disorderly muscular action just mentioned, some one or more of the following phenomena: pallor, coldness, and anæsthesia of the neuralgic area, partial paralysis and atrophy of the affected nerve, amaurosis, paralysis of various cerebral nerves, dilatation of the pupils, partial atrophy and enfeeblement of voluntary muscles, constipation of the bowels, deficient menstruation, certain indolent ulcers to which the epithets "neuralgic and cold" have been applied. 5th. Cases which, while presenting any of the phenomena characteristic of each of the preceding groups, are distinguished by

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* Read at a Meeting of the Medical Society of London, January 15th.

symptoms of excessive secretion, the glands or glandular surfaces, which are excessively active, being generally seated within or near the region of pain. These symptoms comprise lachrymation, excessive nasal secretion, ptyalism, bronchorrhœa, nervous flatulence, diarrhœa, excessive secretion of urine, seminal emissions, leucorrhœa, and unilateral sweating, or sweating over circumscribed areas. 6th. Cases which, while presenting some of the characteristics already described, also present symptoms of local inflammation, which manifests itself in various shapes, the peculiarity of the phenomenon in each case being dependent on the special character of the structure in which it appears. Dr. Chapman affirmed, as a general therapeutical principle, that those agents which can be used with the greatest effect in order to excite a sedative influence on the nervous centres, the hyperæmia of which gives rise to the pain and complications in question, are precisely those which are likely to exert the greatest remedial power. He believes that the best method of cure consists in modifying the temperature of the spinal region by the application of heat and cold. The paper concluded by a general explanation how to apply both cold and heat along the different parts of the spine, in order to produce the specifically sedative effects intended in each case, by warnings to avoid certain dangers which are incident to the practice of the method by those who, without the exercise of adequate caution and study of the principles which underlie it, presume to use it as if it were a mere empirical nostrum, and by a brief discussion of several cases exemplifying, in a signal manner, the efficacy of the method in question in treating neuralgia, as well as its kindred disorders, and especially in inducing sleep.

Art. 32.—*On Galvanism in Neuralgia.*

By Walter G. Smith, M.D., F.R.C.S.

(*British Medical Journal*, February 3.)

At a meeting of the Medical Society of the College of Physicians, Ireland, on December 13th, Dr. Walter G. Smith read a paper on the use of the direct current in neuralgia. Three cases were cited, and occasion was taken to observe that the main points to be ascertained were the following: 1. Is the direct current, as a rule, superior to the induced current in the treatment of neuralgia. 2. Are there any cases specially fitted for the employment of the induced current? 3. Is there any essential difference between the action of the positive and the negative poles on neuralgic parts? Though the answer to the first query was decidedly in the affirmative, experience was not as yet united on the other points. At the close of the communication two forms of battery were exhibited—viz., a portable thirty-celled Smee's battery and a ten-celled Leclanché battery; the latter was that preferred by the author to all others. It combined the advantages of cleanliness, durability, and constancy, requiring no care for a long time after it was once charged. Dr. Smith had in his possession one Leclanché battery which had been charged fourteen months ago, and had remained in

good working order ever since; and Mr. Yeates had had two cells of it in use for working an electric bell for three years without recharging.

Art. 33.—*On the Expectant Treatment of Delirium Tremens.**

By M. Decaisne.

(*Archives Générales de Médecine*, Novembre, 1871.)

"I have recently had opportunities of treating several cases of delirium by the principal medicinal agents recommended for this affection. To five patients I administered opium, to four chloral, and to four others digitalis. The average period of cure, or at least of very marked relief of all the symptoms of mental excitement, was five days in the treatment by opium, and six days when chloral or digitalis had been given. I prescribed the same régime for all my patients, and was surprised to find that the results were almost the same, and had been obtained in almost the same time, in spite of certain differences in the special physiological effects of each medicinal agent.

"I then resolved to submit a certain number of patients to an entirely expectant plan of treatment, in order to determine whether simple régime and a withholding of the cause of the disease would give a similar result. The eight patients who were treated in this way were of different ages, between twenty-four and sixty-two years, and all, with the exception of one, were suffering from their first attack of delirium tremens.

"All were submitted to the following régime:—entire abstinence from wine and spirits; some beer and an infusion of orange-leaves were given as drinks. The diet was low; a warm bath was given every day; and every morning each patient took a purgative draught containing sulphate of magnesia."

The author gives as an example the details of a case in which the patient, aged twenty-eight years, was cured at the end of five days of all symptoms except some persistent trembling of the hands and embarrassed movement of the tongue.

"The use of opium in the treatment of delirium tremens is not unattended with danger, on account of the large doses which it becomes necessary to arrive at progressively in the majority of cases. These large doses expose the patient to the risks of an accumulation of the drug. I have been enabled to convince myself that digitalis, when employed in large doses, often causes nausea and vomiting. In two cases chloral seemed to me to have been quite useless. It is at least an uncertain agent, upon which it is impossible to rely.

"It is not my intention to prove that we ought to reject, in the treatment of delirium tremens, those medicinal agents which, when discreetly used, have rendered, and will still render important service. I wish only to direct the attention of practitioners to a method of treat-

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* Communicated to the Académie de Médecine.

ment which has recently been too much neglected, and one which it seems to me is capable of being often employed with advantage."

Art. 34.—*Athetosis.*

By William A. Hammond, M.D.

(*Diseases of the Nervous System.* New York, Appleton, 1871.)

Under the name Athetosis (from Αθετος—without fixed position), Dr. Hammond has described an affection which he believes has not hitherto been recorded, and which is characterized by an inability of the patient to retain his fingers and toes in any given position, and by their continual motion. He has observed two cases of this curious affection, both of which occurred in epileptics. In one of these patients the symptoms were observed after an attack of delirium tremens, which had been followed by a condition of unconsciousness for six weeks.

"Soon after recovering his intelligence he noticed a slight sensation of numbness in the whole of the right upper extremity, and in the toes of the same side. At first the movements of the fingers were to some extent under the control of his will, especially when this was strongly exerted, and assisted by his eyesight, and he could, by placing his hand behind him, restrain them to a still greater degree. He soon, however, found that his labour was very much impeded, and he had gradually been reduced from time to time to work requiring less care than the finishing at which he had been very expert. The right forearm, from the continual action of the muscles, was much larger than the other; and the muscles were hard and developed like those of a gymnast. When told to close his hand, he held it out at arm's length, clasped the wrist with the other hand, and then, exerting all his power, succeeded, after at least half a minute, in flexing the fingers, but instantaneously they opened again, and resumed their movements." Dr. Hammond is inclined to think that this affection is analogous to chorea and cerebro-spinal sclerosis, and that the symptoms point to implication of intracranial ganglia, and of the upper portion of the spinal cord.

Art. 35.—*On the Morbid Anatomy of Paralysis Agitans.**

By M. Joffroy.

(*Gazette Médicale de Paris,* No. 50, 1871.)

The author of this contribution gives the results of investigations recently made in three cases of paralysis agitans.

The first and second cases were very well-marked instances of this affection; the third was probably less conclusive on account of attacks of articular rheumatism and secondary rheumatic deposits.

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* Communicated to the Société de Biologie, Paris.

The subjects of these three cases were aged females.

Two kinds of lesion were met with in these three cases on examination of the medulla and cord. The constant and the particular lesions were met with in only two of these cases, the first and the third.

The constant lesions were :—

1. *Obliteration of the central canal of the cord.*—This canal is always patent in the infant, often filled up in the adult, and always so in the aged. But in paralysis agitans the epithelial cells which line the ependyma undergo proliferation in a very active manner, and completely obliterate the central canal.

2. *Proliferation of the nuclei which surround the ependyma.*—It has been remarked that this very active proliferation of the epithelial cells of the ependyma is propagated to the connective tissue surrounding the central canal. The proliferation of the nuclei of the connective tissue extends for some distance, sometimes almost as far as the grey horns. These nuclei, which are visible in the infant, but become less so in the aged, represent then an important lesion.

3. *Pigmentation of the nerve-cells.*—In the infant there is no pigmentation save in cases of disease of the cord. It commences to show itself in the adult. In M. Joffroy's cases this pigmentation was very pronounced, principally in the cells of the vesicular column of Clarke.

Finally, it may be stated that in two cases the amyloid bodies seemed to be less abundant than usual; but evidently these play no important part.

In the first case a quite special lesion was found near the calamus scriptorius. This consisted in circumscribed meningitis with production of nuclei of connective tissue and accumulation of leucocytes, forming a rounded mass which had distended and distorted the calamus. This morbid change had extended to some extent into the adjacent nervous tissue, in the midst of which were observed numerous capillary vessels and some small hæmorrhagic deposits.

It is possible that this lesion was but the continuation and exaggeration of the lesion of the canal, which had extended from the ependyma of the cord, to that of the fourth ventricle.

In the third case there was observed on the posterior surface of the medulla oblongata near the pons Varolii a patch of sclerosis composed of fibrillar connective tissue and containing numerous winding vessels.

The nuclei of the connective tissue at this part of the bulb were found in great abundance. In this case there was no trembling of the head.

In the second and most marked case, no lesion could be discovered in the medulla or in the pons.

Parkinson and Oppolzer held that the lesions of paralysis agitans consisted in a sclerous alteration of the tissue of the medulla oblongata. Parkinson, however, did not use the microscope in the study of his case. That of Oppolzer is far from being conclusive. M. Joffroy, relying upon the analysis of his three cases, thinks it certain that the lesion of paralysis agitans is not to be found in the medulla, and if it does exist it is to be found in the cord.

Art. 36.—*Report of a Case of Aphasia.*

By James G. Glover, M.D.

(*Medical Times and Gazette*, December 9.)

At a meeting of the Clinical Society on November 24th, Dr. Glover described a case of aphasia in a patient under his care at the Holloway and North Islington Dispensary. G. P., aged sixty-three, an intelligent workman in a varnish and colour manufactory, came under treatment in the beginning of September with a very imperfect power of expressing himself, furred tongue, high-coloured urine, and a weak pulse. The affection of the faculty of language was peculiar. Many words the patient could say quite well, but he was greatly embarrassed for want of the proper words. This appeared in his attempt to answer questions, and especially when asked to say what the names of particular objects were. Dr. Glover gave several curious illustrations. One day, on being shown a book and asked what it was, he said "good," "house," "butter." On being asked to write the name he said, "a good"; then he remembered the right word and said "book." On a watch being shown to him, and being asked for the name of it, he said "*Tempus fugit*," but could not say the proper word; but on being asked to write it, he wrote "watch." He called a ring "a knife," and purse "bug," "book," "bug," "a pocket-book." One day, after naming the door and the fire, and being asked the name of the window, he was greatly puzzled, and said "five," "glass," "sash"; he was then quite confused for a few minutes, and being asked to write it, he put "fire-away," "fender," "windway," "windway," "shot," "lock." Ten days later, being asked the same question, he said "windle," and quickly "a window." He seems at present to know when he answers wrongly, and is sometimes impatient, and sometimes amused at his errors and his embarrassment. There was no other symptom of cerebral disease, no hemiplegia, and either none or but the slightest difference in the sensation of the two sides. He walked well, wrote fairly, shaved well, and protruded his tongue straight. Dr. Glover remarked that the case was especially interesting for being simple and uncomplicated with any lesion of intelligence or of motion, such as right hemiplegia. There was nothing to indicate any affection of the left hemisphere more than one of the right, as M. Broca's remarkable theory supposed, which localized this disease in some lesion of the third left anteror convolution. Seven or eight months ago the patient had had a similar attack, which only incapacitated him for work one whole day, by reason of the way in which he put wrong names on the varnish cases. The present attack began about eight o'clock one morning in the water-closet. He seemed to lose himself. He foamed at the mouth and fell down, but not quite unconsciously, for he tried to save himself. He lost his speech, but spoke a little, cried a little, and seemed inclined to fret. He walked home with the help of a young man, who gave these particulars of the attack, and who thought that at the time the face was drawn to the left side. There was no drawing of the mouth since Dr. Glover attended him, and he saw him the day after the attack. Occasionally, the heart and pulse were irregular; at other times, and generally, they were regular, but weak. There was no

abnormal sound. Mr. Carter had kindly examined the eyes, but the existence of lenticular opacity made it impossible to get any help in diagnosis from the state of the fundus. The patient's previous health had been good, excepting yellow fever in 1833 or 1834. He never had rheumatism or syphilis. The treatment at first was chiefly expectant. Latterly, ammonia and a little wine and beef have been its principal features. The aphasia had become rather less, though still persistent. Dr. Glover thought the symptoms might be attributed to either softening, or embolism, or slight extravasation affecting a very limited portion of the brain, and inclined rather to extravasation, from the persistence of the aphasia and the nature of the attack.

Art. 37.—*On the Use of Bromide of Potassium in Epilepsy.*

By M. Jules Falret.

(*Journal of Mental Science*, January.)

M. Falret gives the results of his treatment at Bicêtre during the years 1867-70, where he treated, almost invariably, confirmed cases where the disease was of long standing. He begins by giving fifteen grains a day, very gradually increased until the dose of one drachm is reached. This usually diminishes the number of attacks, and is then persisted with; if not, the quantity is again increased every week or fortnight, until eight scruples or two drachms, are taken daily. If considerable improvement results, and if no bad consequences are observed, this dose is continued for one or two years, and then gradually brought down to the original dose of fifteen grains. He attaches great importance to the slowness with which the dose is increased and diminished; and ascribes most failures to suddenly leaving off the medicine. By this treatment he states that he has cured one-seventh of his cases, greatly improved three-sevenths, and failed with the remainder. Attacks of maniacal violence proved most amenable to treatment; next in order came nocturnal fits, then diurnal; vertigo and the "petit mal" being most difficult of cure, these last sometimes taking the place of ordinary fits under treatment. An acneiform eruption on the face, shoulders, and back is generally observed as soon as the daily dose of one drachm is reached; when it is not produced M. Falret usually finds that the bromide does no good—it sometimes becomes so annoying as to prevent treatment being continued. Considerable loss of mental power and other cerebral symptoms, of course, indicate an immediate suspension of the remedy; they seem to M. Falret more frequent in private practice than at Bicêtre. One patient died very suddenly, while taking only moderate doses of the bromide; the author analyzed the viscera, and found considerable accumulation of the salt in the brain and liver.

This paper was read before the Société Médico-Psychologique, and gave rise to two very interesting discussions, of which only the most salient points can be given here.

M. Morel looked upon the doses given as "fearful;" he has himself rarely given more than two scruples or one drachm daily.

M. Legrand du Saulle, on the contrary, stated that he saw no danger in such large doses, provided they were only arrived at very slowly: his full dose is two drachms and a half daily, which he only attains after several months' treatment. With this precaution he has never seen any evil results, not even emaciation. He believes, however, that such large doses are only needed for men, and that women are sufficiently acted upon by half a drachm to one drachm daily. He has treated 138 cases in all, cured ten of these, greatly improved 19, improved 45, and failed in 64. He prefers the bromide of sodium for chorea, hysteria, hemicrania, and the early stages of melancholia; and the bromide of ammonium in all forms of cerebral congestion; he has seen it relieve symptoms of this kind in general paralysis with great rapidity.

M. Voison, who was the originator of this graduated method of administering the bromide, read a long critique upon M. J. Falret's paper. Besides acne simplex and indurata, he has observed another eruption of specific character in persons taking the salt. This consists of patches of confluent acne pustules, generally on the calves of the legs, which end by producing adherent scabs, and sometimes ulcers difficult to heal. He shows, by figures, that the occurrence of skin eruptions is no evidence of a favourable action of the remedy, which he looks for in some sign that it is acting on the medulla oblongata. This he finds by titillating the pharynx, nares, and epiglottis, and observing whether the reflex acts of nausea, sneezing, and coughing are produced. As soon as they cease, he considers the medicine to be producing its physiological action, and, therefore, to be acting beneficially upon the disease. He dwelt at some length on the various phenomena of bromism (among which he has seen acute mania), and urged that no patient should be allowed to take more than one drachm of the bromide daily without being frequently examined by his physician. Of 41 cases (generally of confirmed epilepsy) treated by M. Voison, 17 have had no attack for five years, 20 are improved, and 4 remain in the same state. No one seems to have questioned the efficacy of the bromide during these two meetings, but, since then, M. Delasiauve and a few men of less note have expressed doubts as to its curative action in confirmed epilepsy, and have seen increased violence of attacks follow its suspension. What would they have said had they known that Binz and other Germans totally deny that the bromides have any different action from the chlorides of the same bases?

Art. 38.—*Paralysis of Taste and Smell.*

By J. Burney Yeo, M.D., M.R.C.P.

(*British Medical Journal*, May 25.)

At a meeting of the Clinical Society of London, May 10th, Dr. Burney Yeo read a paper on a case of paralysis of the senses of taste and smell following concussion of the brain. The patient, a man aged fifty, came to King's College Hospital on January 11th, having four months before

been thrown out of a cart. He was admitted into St. Thomas' Hospital in a semi-conscious state, under the care of Mr. Croft. A slight contusion was discovered on the back of the head, but there was no fractured bone. He vomited, was delirious and insensible during the night, and in the morning complained of much pain in the head, which was relieved by aperients. He soon recovered, and, feeling well, discharged himself after he had been in the hospital about a week. He found, however, that he could neither taste nor smell. This condition had persisted ever since the accident. He had suffered also a good deal from giddiness, and from severe pains on the right side of the head. He had been a perfectly healthy man, and quite free from any syphilitic taint. The patient's statements were thoroughly tested. Salt, sugar, solution of quinine, dilute acids, tincture of assafœtida, were applied to the tip, the centre, and the back part of the tongue, to the under as well as the upper surface, but were not recognised in any degree. The tongue, however, was sensitive to the slightest touch, and its movements were perfect. The sense of smell, similarly tested, was found to be absent. The patient was ordered five grains of iodide of potassium three times a day. The first two doses produced such violent symptoms of iodism that it could not be continued. The dose was therefore reduced to two grains; and as this also acted in the same way, only one grain three times a day was given. This dose, at first, produced iodism, and afterwards purged him; he, however, continued to take it. In a few days, the sense of taste began to return. On January 25th, he could taste solution of quinine as bitter, and tincture of assafœtida as bitter; but he could detect no odour in the latter. He could distinguish salt from sugar, but not tea from coffee. The sense of taste continued to return rapidly. On the 11th of February, he was able to taste the flavour of meat for the first time for twenty weeks. He could also now perceive strong odours; but smell came back less rapidly and less perfectly than taste. In connexion with the return of smell, he complained of a curious subjective affection of this sense: a foul smell came into his nose like that of a stale tobacco-pipe, and it seemed to come down from the head. By the 20th of March, the patient was quite well. Dr. Yeo thought this case offered many points of clinical and physiological interest. He thought it a somewhat rare circumstance to find the senses of taste and smell clearly absent together without any other affection of the nervous system. The absence of taste could not, in this case, be simply the consequence of loss of smell, as solution of quinine and tincture of assafœtida were at first not distinguishable from water; and when the latter was first recognised, it was as a *bitter* substance, and its peculiar flavour was not perceived: moreover, the sense of smell returned much later than the sense of taste. It was difficult to say what could be the lesion which would produce paralysis of these two special nerves and of no others. This difficulty was increased rather than diminished by the very remarkable manner in which the administration of iodide of potassium had been followed by the recovery of both senses.

Dr. Lockhart Clarke believed the condition to depend on shock. He had seen several similar cases originating in this cause. He did not think there was any lesion, and was of opinion that, pro-

bably, the stimulation of the nasal mucous membrane produced the cure. He related the case of a child who, by standing on its head, brought on symptoms of concussion and hyperæsthesia of the leg, with the exception of the parts about the knee. The child had previously suffered from chorea, and indeed still presented slight symptoms of that affection. The child had, previously to being seen by Dr. Clarke, been confined to bed for four months. By local treatment the limb got well in six weeks.

Dr. Hughlings Jackson thought the case a very interesting and yet a very puzzling one. He had not seen complete loss of smell and complete loss of taste together. Not very unfrequently a patient would *say* he had loss of taste, when examination showed clearly that he had lost smell alone. The subjective sensations complained of by Dr. Yeo's patient were very important. Such subjective sensations occurred as a so-called aura in some epileptiform seizures, and especially in those cases in which consciousness was lost without convulsions; in some cases there were convulsions. Dr. Hughlings Jackson believed that in these cases there was disease in the region of the anterior cerebral artery, and that the subjective sensations were of particularly evil omen as to mental failure.

Dr. Broadbent said that he had seen two cases in which incomplete loss of smell and taste had become permanent. He doubted whether there was total loss of taste in Dr. Yeo's patient, and related the details of an interesting case, showing the possibility of Dr. Yeo's patient having meant that he could not distinguish all the qualities of the various substances.

Dr. Buzzard, referring to a case related to the Society by Dr. Anstie, in which severe neuralgia of the fifth nerve was accompanied by loss of smell and taste, suggested the possibility that, in Dr. Yeo's case, a lesion of the trigeminus had caused the loss of the same two special senses, the integrity of this nerve being apparently as necessary for the proper action of the olfactory lobes as for the perfection of the sense of taste.

Mr. Christopher Heath had seen more than one case in which taste and smell were gone, and alluded to the case of a lady who, after an accident, lost both taste and smell. This lady had, strange to say, found several among her Indian friends who had also lost both senses.

The President thought that the cases were not very rare. It was very difficult to separate taste, touch, and smell. In the present case quinine was not felt in any degree by touch or smell, but touch was not gone. He thought there may have been shock to the sympathetic centres in the neck, and through this channel to the nerves of taste and smell.

Dr. L. Clarke referred to a case of locomotor ataxy which he had already published, in which both taste and smell were lost.

The President observed that Dr. Clarke's case exemplified what he had just said about the sympathetic.

Art. 39.—*Is Insanity on the Increase?*

By Henry Maudsley, M.D., F.R.C.P.

(*British Medical Journal*, January 13.)

The conclusions derived from the considerations contained in this paper may be thus summed up:

1. There is no satisfactory evidence of an increase in the proportion of occurring cases of insanity to the population; and no evidence, therefore, of an increased liability to insanity.

2. It is not necessary to assume such an increase in order to account for the undoubted great increase in the number of registered insane persons.

3. The difference between one insane person in 802 of the population in 1844, and one in 400 in 1870, is mainly, if not entirely, owing to the fact that in the former year the returns included only half the existing insane persons in the country, while in the latter year nearly all of them have been registered.

4. Some part of the difference is owing to the fact that certain patients are registered as lunatics now who would never have been thought so in times past.

5. A lower rate of mortality and a lower percentage of recoveries may account for a part of the increase in the total amount of insanity.

6. The proportion of admissions to the population, which represents approximatively the occurring cases of insanity, does not, when the necessary allowances are made, yield evidence of any serious increase.

Art. 40.—*Conium in the Treatment of Acute Mania.*

By J. Crichton Browne, M.D., F.R.S.E., Medical Director, West Riding Asylum.

(*The Lancet*, Feb. 17.)

With the view of determining the relative duration of cases of acute mania treated with conium and with other remedies, Dr. Browne has contrasted twelve cases from each category. As the result of that contrast, he finds that twelve consecutive cases treated from the first with conium, admitted subsequent to Feb. 25th, 1871, and since discharged recovered, had an average duration, as measured by residence in the asylum, of 102 days; whereas twelve consecutive cases treated with other remedies, such as bromide of potassium, cannabis indica, chloral, and digitalis, admitted subsequent to October 1st, 1870, and since discharged recovered, had an average duration, as measured by residence in the asylum, of 150 days. This shows a balance of 48 days in favour of conium. When conium was used, that period of convalescence which it is thought prudent to interpose between the date when recovery might be called complete and the date of discharge from the asylum was in no instance unusually shortened. In some cases it might be thought that it was unnecessarily prolonged. So rapid and decisive were the bene-

ficial effects of the remedy that it was feared at first they might prove transitory, and that, as is not seldom the case when recovery is sudden, a relapse might be looked for. Experience having now taught that this fear is groundless, a considerable curtailment of the term of medical supervision may be henceforth safely conceded. Indeed, so prompt is recovery, as a rule, under the conium treatment, that it appears that the necessity of removal to an asylum may be obviated in some cases of acute mania if it is had recourse to, and judiciously conducted, in their initial stage.

The curative effects of conium in acute mania are not limited to those cases in which that remedy is used from the outset of the disorder. Eight patients in the West Riding Asylum in whom other methods of treatment had been first employed have derived marked advantage from the substitution of conium for other drugs.

Dr. Browne expresses his conviction that the conium treatment of acute mania will speedily recommend itself, to those who use it rightly, as the most efficacious mode of dealing with that form of mental disease. In order, however, to secure its benefits, two conditions must be observed: firstly, the preparation used must be good and active; secondly, the doses administered must be adequate in amount. The succus conii is certainly the most trustworthy preparation of the drug. Even this, however, varies in activity in an extraordinary degree. As to the doses required, Dr. Browne corroborates Dr. Harley's assertion that they must be sufficient to produce the physiological action of the drug in order to prove beneficial in disease; the effect of conium is inversely as the motor activity of the individual to whom it is given. This being so, it must be evident that in acute mania, in which motor activity is at a maximum, very large doses will be essential. A woman labouring under acute mania has taken as much as two ounces of succus conii at one dose, repeated every four hours for two days. This was, however, an extreme case. As a rule, Dr. Browne has commenced with two drachms of the succus for a woman, and three drachms for a man; and has rapidly increased the dose until he has noticed some cessation of restlessness, or signs of lassitude or weakness of the limbs. It is rarely that a dose of one ounce or ten drachms requires to be exceeded; and sometimes improvement begins with the very first administration, in which case no increase of quantity is necessary.

Art. 41.—*Treatment of Climacteric Insanity.*

By W. J. Conklin, Assistant Physician to the Southern Ohio Lunatic Asylum, Dayton, Ohio.

(*American Journal of the Medical Sciences.*)

Dr. Conklin says that, like all suicidal patients, there are two periods of especial danger: 1st. Early in the morning, when they are very liable to give way to their morbid impulses. Often a lunch before rising will, for the time being, scatter all such notions. 2nd. During the period of convalescence, when everything seems to promise a speedy and complete recovery, the nurses are apt to be less watchful, and the

patient may make a successful attempt during a temporary exacerbation to which all are so liable. The friends must in all cases be warned of the danger of suicide even if no such intention appears on the surface. In many cases opium administered in large doses proves a very valuable agent; but a drawback to its use is the liability to the formation of the opium habit—a liability stronger at this than at any other period of life. While the depression is most marked, or during the paroxysms of excitement, the following prescription is useful: — ℞ Chloral-hydrat., potassii bromidi, āā ʒij; spts. frumenti, syrupi simplicis, āā fʒj. M. Sig. Tablespoonful in a wine-glassful of water every four hours. A glass of ale will often act like a charm in calming an excited patient. Tonic medicines constitute the chief therapeutical means. He has seen, frequently seen, great benefit result from the administration of small doses of quinia in combination with the pyrophosphate of iron and Horsford's acid phosphates. Constipation is almost invariably present. Cathartics often fail to move the bowels, and occasionally do much harm. The real seat of the torpidity is in the brain, not in the intestines; in fact, when purgatives have failed, a good dose or two of opium will often accomplish the object; as a rule, gentle laxatives and tonics will accomplish all that is necessary.

Art. 42.—*Report of a Case of Intracranial Disease.*

By Walter Moxon, M.D., F.R.C.P.

(*Medical Times and Gazette*, December 9, 1871.)

At a meeting of the Clinical Society of London, on November 24th, Dr. Moxon related a case of intracranial disease cured by iodide of potassium. A young man, aged twenty-one, was admitted into Guy's Hospital, under Dr. Moxon's care, having been ill six months. The illness came on with severe headache; in about three months ptosis and ocular paralysis of the left side commenced, and as it went on the left fifth nerve also became involved, and the right hand grew partially numb. When admitted he had agonizing pain in the head. The left eye was intensely red, and its cornea ulcerated; it was almost immovable, and the lid was dropped. He could not feel moderate touches on the left face, nor taste salt on the left tongue, nor use left masticating muscles. He had two slight seizures of a doubtful kind on the first two days after admission. Iodide of potassium was given in three-grain doses thrice daily, and the dose increased to a scruple. He gradually got better of all his symptoms. The pain left him very soon; the other symptoms more gradually. He was in attendance at the Society's rooms, and the state of his left face and eye was practically normal again. The points to which attention was directed were chiefly these. That this is the third case of syphilitic disease about the sella Turcica Dr. Moxon had met with. This he connected with the growth of the sphenoidal sinuses there, bringing in illustration the occurrence of exostoses very frequently about the frontal sinuses, and of exostoses on the long bones at the region of the epiphysial cartilage; all these facts

going to prove that the seats of late development are unusually liable to disease. Dr. Moxon believed that it was incumbent on every one who had a case of local intracranial disease come under his care, to treat it at once with iodide of potassium, without waiting to make out its nature. He had not seen any serious ill effects from the iodide when taken to the extent of a drachm in the day for long periods. Slight salivation, a red rash, and catarrh, were not common, though they occasionally occur; and they are by no means to be compared with local intracranial disease as alternatives. As to absorption of the testes, he had never seen it. The iodism of old authors was probably referred to the poisoning of the blood by the absorption into it of broken-down matter of goîtres during their cure.

Art. 43.—*On the Growth of Nails as a Prognostic Indication in Cerebral Paralysis.*

By S. Weir Mitchell, M.D.

(*American Journal of the Medical Sciences*, April.)

In a communication to the College of Physicians of Philadelphia, Dr. Mitchell drew attention to the "growth of the nails as a prognostic indication in cerebral paralysis." In a case of paralysis Dr. Mitchell observed that the nails of the paralysed hand, which had been previously healthy, became marked with deep serrations, crossing from side to side, and about a line apart. The peculiarity continued as long as the case was under his care, the growth of the nails being much slower than that of the nails of the unaffected hand. He resolved in future cases to study the nail-growth attentively. In a patient forty-seven years of age, the subject of paralysis supervening on apoplexy, he stained four of the nails of the palsied hand a deep yellow with nitric acid down to the lower edge. To his surprise, while the nails of the other hand grew as usual, these did not grow at all during three weeks. "Then, and while the arm was throughout still motionless, the nails began to grow, as was shown by a narrow line of white below the tinted portions. Within a week after this, the fingers became controllable by the will, and gradually the whole hand and then the arm was restored." In another patient, aged forty-six, suffering from paralysis of the arm, and aphasia, the nails of both hands were stained with the acid on the fourth day. Not the slightest growth took place on the palsied side for a fortnight, when, a white line being detected, the prediction was risked that, within a week, the limb would be moved, and this was realized more than completely. Apologizing for bringing the circumstance before the Profession on the slight basis of only two cases, Dr. Mitchell observes that some time may elapse before he meets with others at a sufficiently early period of their process, while the attention of other persons may be advantageously called to the subject.

"I have been unable to find that this observation has been made before. In old cerebral palsies the nails very often become deformed, and even the muscles may undergo changes, which are possibly due to the neutral sclerotic alterations which sometimes come on after the part

has been long disused. They are then the direct result of isolation from spinal trophic influence. In recent cerebral palsies there is often œdema, but no muscular atrophy; and it is, therefore, remarkable that the nails should even suffer in their nutrition. It is still more curious, when we reflect that even in parts whose nerves are severed the nails grow as usual, and that chiefly in partial nerve-wounds do we meet with clubbing or serration. It seems as if the injuries of the brain must have excited an inhibitory influence, and the fact aids, to my mind, the view which I hold with many, that there are nutritive nerves. Theorists who follow Brown-Séquard would probably regard the checked growth as due to a spastic contraction of the vessels feeding the nail, and as a vaso-motor nerve impression. I cannot admit this, because no considerable amount of such spasm could last long enough, or be complete enough, to cause the result without making a visible difference in the tint of the nail and the thin parts at its matrix. These remained much as usual—perhaps even a little redder than common. To test this view, I faradized with a secondary current and dry wire-brush two of the nails daily, giving great pain and greatly flushing them. They were also kept, thrice a day, for half an hour in hot water, so as to flush them as much as possible. My patient, an intelligent person, being much interested in the question, submitted readily to this treatment, but no more growth took place in these nails than in the others. I have noted the low temperature in the last case, but in hands cut off from all nerve-connection it is still lower, and yet the nails grow. It does look, therefore, in this case, as if some influence was at work here which did not act through a change in the vascular supplies. It is a point in favour of trophic nerves.

"Other and most interesting questions also present themselves. The re-growth preceded the return of will-power. If this should prove constant or common, it will certainly help us to answer the inevitable query as to whether the arm will recover at all, and how soon. It is, of course, desirable to learn how often this check of nail-growth occurs—whether in all cerebral palsies or only in certain ones—whether, in a word, it relates itself to particular brain regions, and is a direct effect, or arises from the spinal shock which these brain injuries occasion. I trust that I have been able to show, therefore, that this apparently trifling symptom may open the way to the solution of very important questions, and is certainly not devoid of interest for the most purely practical among us."

(B) CONCERNING THE RESPIRATORY SYSTEM.

ART. 44.—*Respiratory Murmurs.*

By JAMES R. LEAMING, M.D.

(*The Medical Record*, Feb. 1.)

At a meeting of the New York Academy of Medicine, January 4th, Dr. James R. Leaming read an able paper on "Respiratory Murmurs," of which the following is an abstract:—

After carefully examining the opinions of different writers, as

Laennec, M. Beau, of Paris; Dr. Sanderson, of Edinburgh; Skoda, of Vienna; Dr. Hyde Salter; Dr. Waters, of Liverpool; Dr. Cammann, late of this city; Dr. Gerhard, of Philadelphia; Drs. Walshe, Corrigan, and Stokes, Dr. Leaming said:—

"It is evident that some consider the respiratory murmur as having a single seat and cause, while others recognise its composite character. Yet I am not aware that any one has ever attempted to analyse the murmur, and study its constituents separately, as well as together. They speak of the vesicular character, the pulmonary quality of the respiration, but they attempt no analysis. To show that this may be done, and ought to be done, in order to attain a higher grade of excellence in diagnosis, is the main object of this paper. A clear understanding of the whole matter will make it necessary, as preliminary, to look at the minute anatomy of the tissue of the lungs and of the bronchial system; secondly, the circulation of the lungs and of the bronchial system; and, thirdly, the characteristics and constitution of the residual air, its object and office.

"The bronchial system may be, and is frequently called the connective system, or the broncho-respiratory; and the pulmonary is called the true respiratory system. They differ in almost every respect. The office of the broncho-respiratory is to convey air into the true respiratory system, while the true respiratory system is where the great function of vitalizing the blood is perfected. The bronchial system is characterized by cartilage, in its fibrous sheath, &c.

"The bronchial arteries have been called the nutritive arteries by anatomists, but I am not aware that they have ever dwelt upon the fact that the venæ comites do not attend the arteries into the pulmonary structure, and consequently this gives them a peculiar character. The bronchial veins return all the blood of the bronchial arteries—the nutritive arteries have no veins. Their blood is re-aërated where they do their work, and finds its way into the venous radicles of the pulmonary vein as arterial blood. This anomaly in the circulation is of great interest in explaining physiological causes and pathological effects. In pneumonia, it is this artery, accompanied with its plexus of ganglia of the organic nerves, lymphatics, &c., that preserves the life of the part and governs the whole process of resolution. We can all remember the anxiety of practitioners in the past to prevent abscess and gangrene of the lung after inflammation. But time and study of the natural history of the disease has proved to us that gangrene and abscess are rare accidents, even when no treatment at all is had. This peculiar vascular arrangement gives us an early knowledge, in many cases, of commencing phthisis. Occupation of the air-sacs by tubercle interferes with the circulation of the nutrient artery, and blood is thrown back upon the bronchial artery, resulting in bronchonagia—a conservative act, for, like the application of leeches, it sets the absorbents actively at work to remove the cause. In this way cases of early phthisis are self-cured, or, at all events, ameliorated, and the physician is guided in his treatment. This singular fact in the circulation was discovered by the late Dr. Cammann, in making his experiments to prove the non-anastomosis of the arteries of the lungs. This was shortly after 1840, and before any experiments had been made in Europe in regard to this

circulation. Since then, several observers have come nearly to the same conclusion. The view I take is supported by anatomical fact, a basis on which all physiological theories should be founded.

"I remember that Dr. Cammann could not reconcile the incongruity of the apparent fact, that venous blood passed directly into the aërated blood of the pulmonary vein, and then to the left heart. The fact has been overlooked, that the blood from the nutrient artery passes through capillaries in the true respiratory system, on its way to the radicles of the pulmonary vein, and, of course, is re-aërated.

"I believe I am warranted in holding that there is a complete difference in the blood-vessels of the connective and of the pulmonary system. The nutrient arteries of the bronchial system have their venæ comites; the nutrient arteries of the true respiratory system have no accompanying veins, but pass their blood re-aërated directly into the pulmonary vein, prepared for systemic circulation. The nutrient artery is no exception to the rule of complete difference in the two systems, for in its office it belongs wholly to the true respiratory. The vessels of the bronchial system are the bronchial arteries and veins: the vessels of the true respiratory are the pulmonary artery and vein, and the nutrient artery of the lungs. Where the bronchial system ends the pulmonary begins, and the division is sufficiently marked—it is where cartilage ceases and alveoli commence."

Following a minute description of the true respiratory system, the speaker stated that physiologists describe residual air as filling the respiratory system as high up as the third or fourth division of the bronchiæ. It not only fills the true respiratory system, but it distends it. The elements of the distending force are atmospheric pressure, muscular contraction, rarefaction, the laws of diffusion of gases, and that of affinitive attraction between oxygen and venous blood. The residual air occupies its position with such persistence as to be with difficulty dislodged after death, even with much pressure. It keeps its place with vastly greater tenacity during life, when each element of force is in active operation.

During inspiration the contraction of the diaphragm increases the capacity of the chest; at the same time the epiglottis is raised, and the weight of the atmosphere operates actively in dilating the lungs. Rarefaction of the newly inspired air takes place upon inspiration, owing to its immediate and intimate admixture with the residual air, and this is the third element of dilating force. The residual air is estimated to be 170 cubic inches, and the inspired air at 20. At each inspiration, therefore, the residual air will be increased about one-tenth part in dilating power, plus the rarefaction of the inspired air. But the peculiar elements of this expanding force are the laws of the diffusion of gases, and that of the affinitive attraction between the unaërated blood globules in the capillaries of the rete mirabile of the alveoli and the oxygen which is equally distributed throughout the residual air. Chemistry demonstrates that gases differently constituted in certain relations instantly intermix when brought together. The inspired air and the residual air present these differences. Air entering the connective system moves in a body through the bronchial tubes till it meets the residual air, when the law of the diffusion of gases operating, immediate admix-

ture takes place. The residual air is instantly renewed with oxygen, in accordance with this law. The inspired atmospheric air moves through the connective system as far as the fourth division of the bronchiæ, with no other resistance than the friction of the tubes. When it meets the residual air it is immediately consumed, as it were, and does not accumulate, causing resistance. On this account the inspired air moves with increasing velocity, producing air and tube friction murmur. Tidal air in health is only heard in inspiration. Velocity of the moving air in the tube is the cause of murmur. Any one may demonstrate this fact by breathing through a tube gently, when there will be no murmur; but if the velocity of the moving air is increased, the sound will be increased in sonority and raised in pitch just in accordance with the rate of motion. In health, in unconscious breathing, expiration is not heard, and we know by experience that when it is heard in unconscious breathing, there is disease; it may be phthisis, or it may be emphysema. Other conditions must determine which. A murmur may be produced at will by hurrying the respiration. It is heard in systemic diseases like cholera, or in diseases of particular organs, as in cardiac apnœa, or Bright's small kidney. The cause of murmur in air moving in a tube, no matter what are the other conditions, or the disease, is the *velocity* increasing the air and tube friction.

The author narrated Professor John W. Draper's convincing explanation of one of the efficient causes of the circulation, based on accurate experimentation of affinitive attraction in the systemic capillaries. The same power operates in the pulmonic circulation, but with this important addition, that the affinitive attraction is not alone in the pulmonic tissues and the blood, but principally in the venous blood and the oxygen of the residual air. The intricate mechanism of the respiratory act was explained.

These facts in minute anatomy and physiology, and they hardly admit of any dispute, prove that the residual air as a body has no more motion than has the bottom of the deep sea. No change can occur except molecular, and none other is necessary. The law of diffusion of gases assures the comparative purity of the residual air, as well as its constant and guarded impurity, which is so necessary for the accomplisment of the vital act. The circulation would not go on if each blood globule should immediately come in contact with pure air, for then it would lose its impelling force, and, all the globules alike losing their attraction, stasis would be the consequence. Instead of this, both in the blood and the residual air, each globule and each air-particle moves in perfect order, never being in each other's way. This shows how the individual may live in bad air for a time, resisting its evil tendencies, and even of poisonous gases. It shows also why medical inhalations fail in their object. Medicated vapours have little or no admission into the residual air. Even oxygen gas, which is sometimes serviceable, can only supply atmospherical deficiencies. It can neither do the harm nor the good that has been predicated for it. An animal may even live for a time in pure oxygen gas, the active interchange taking place between the gas and the blood restoring the necessary grade of impurity in the residual air.

The prevailing theories of air and tube friction murmurs, and the mechanism of the crepitant râle were then discussed. All theories, whether of vesicular murmur or crepitant râle, which ignore the presence of the residual air, are of necessity incompetent. The fact that residual air has none but molecular motion, may be demonstrated by a distensible bag, as of india-rubber. If it be forcibly filled with air, there will be air and tube friction murmur at the mouth only, where the air moves in a body with velocity. The body of air in the bag will be increased by particles of air sliding in among each other, and without sound. But there will be resisting vibratory sound in the walls of the tense dilating bag, a susurrus, different, however, from that of the contracting true respiratory system in this, that it is only heard during dilatation, while the other is continuous, owing to active muscular contraction. Dr. Hyde Salter says, after speaking of the occupancy of the true respiratory system by residual air, and that about twenty cubic inches of atmospheric air are added at each inspiration, "each air-cell is therefore a tenth larger at inspiration than expiration." Now it is inconceivable that this slight variation in the capacity of these shallow open cavities should be attended with any sound. I cannot conceive it possible. For be it remembered that the air-cells are not nearly closed cavities, communicating by constricted orifices with the general cavity of the lobular, but wide-mouthed and patulous like a tea-cup, and in inspiration the air is not pumped out of and into these cells, but, as they undergo this slight change of volume, a small part of their contents passes just without them; and then again, on recovery of their capacity, from without just within them, if one can speak of within and without in reference to such slight interchange of situation.

In closing, the author remarked: "In this paper I have endeavoured to show that the bronchial respiratory system is entirely different from the true respiratory system in anatomy, physiology, object, and use, and that the physical signs of pathological change are equally distinct and different; that the residual air, occupying as it does the true respiratory system, with force precludes the idea of currents of air within the lungs, and consequently the accepted theories of the vesicular or respiratory murmurs and of the formation of crepitant râle are necessarily incompetent. If my points are well taken, and the proof convincing, the profession will eventually sustain the truth, and much that has been received as settled literature will be swept away as rubbish, to give room for truer and better grounds of faith. In physical diagnosis the composite character of the respiratory murmur must be made evident analytically as well as synthetically.

"The reasons for introducing a new terminology are, that broncho-respiratory and true respiratory are descriptive, and indicate the seat of the murmurs. The term vesicular murmur was applied by Andral, supposing that it described the minute anatomy of the seat of the murmur. Later investigations show that the term is misapplied; for there are no structures that may properly be called vesicles in the lungs. Again, the terms vesicular and respiratory have been applied indiscriminately, and their present use would lead to confusion and misapprehension. In order practically to study these murmurs it will best be done by select-

ing a healthy person about twenty-five years of age, with perfectly developed chest, and with muscles not hardened by manual labour.

"*Respiratory Murmurs.*—Placing the ear lightly yet firmly to the chest, allowing the head to rise and fall with the respiration, listen to the breath-sounds. The tidal air murmur will first catch the ear, as modified by the true respiratory murmur, and is like the sighing of the trees over our heads in the forest when the boughs are generally stirred by the breeze.

"The character and quality of the respiratory murmur depend upon the absence or excess of one or other of the composing elements. If the true respiratory murmur be maximum in fulness, the tidal air sound will be short, only heard in inspiration, and will be of the soft breezy character described as gently sighing. While, if the broncho-respiratory be in excess, the tidal air sound will be raised in pitch, harsh, and will be heard both in inspiration and expiration, and is a sign of disease, as the other is of health.

"*The broncho-respiratory murmur* may be studied by forcing the breathing, when it will be heard in both inspiration and expiration; and its harshness, loudness, and pitch will depend upon the force given to the respiration. This murmur may be heard in its perfection in the chest of a child, before the true respiratory murmur has been developed.

"*True Respiratory Murmur.*—The ear accustomed to auscultation, after a few moments of concentration of attention upon the respiratory murmur, will recognise its dual composition. If the chest be perfect in condition, the tidal air sound will be heard in inspiration only—soft and short, like breathing gently through the closed teeth; while the true respiratory murmur will be continuous, increasing in fulness in inspiration, and diminishing in expiration. It is of a low pitch, and is like the roaring of the sea at a distance, the waves breaking on an even shore or sand; or, better still, like the sound made by bees in cold weather, when the hive is tapped with the finger. It is like the innumerable vibrations of the wings of bees, increasing to maximum in inspiration, like the coming waves on the sea-shore, and decreasing in expiration as they recede. If the breath be held, this murmur may be heard without admixture, for there can then be no bronchial respiratory murmur. The sound is purely that of the susurrus of the delicate muscular fibres of the true respiratory system, contracting and relaxing over the dilating and resisting residual air. If the breath be held after a full inspiration, the murmur will be at its maximum; if it be held after expiration, it will be at its minimum fulness. It cannot be exaggerated, as has been said of so-called respiratory or vesicular murmur. If the true respiratory system be unduly dilated, it loses its power to contract on the residual air and the murmur wholly ceases. *This* is emphysema, and is proof of the muscular origin of the sound, which may return again after rest. This murmur only commences to be developed in the child at eight years of age; becomes recognisable at twelve, but is only fully developed at maturity.

"A beginner in auscultation may recognise true respiratory murmur in a good subject with ease. But when the chest has lost its excellent quality as an acoustic chamber, by physical changes resulting from inflammation, or when, from disease of the lung itself, the natural respiratory murmur has been altered or lost, or when the chest in its

natural conditions is covered by thick and hardened muscles, the trained expert ear only can arrive at diagnostic truth.

"Many love and enjoy music, and may assist in producing it, but the trained expert alone can lead an orchestra, and harmonize each instrument into a body of perfect song. These facts, instead of being a matter of discouragement, should induce beginners to pursue auscultation with untiring assiduity, knowing that the end will crown them as masters in physical diagnosis.

"The ability to recognise true respiratory murmur under any conditions, to analyse its quality, and measure its power, gives its possessor the means of knowing even the approach of that most insidious disease, phthisis, and suggests the method of prevention.

"The true respiratory system, air-sacs, alveoli, nutrient artery, ganglia of the organic nervous system, with absorbents, &c., all require active use for the prevention of disease. Phthisis does not begin in the lower part of the lungs, which are constantly and actively in motion. If we insure the same kind of exercise in the upper part, we prevent and even arrest incipient disease.

"For more than ten years respiratory murmurs have occupied my diligent attention. The views in this paper are not hastily put forward. Some of them are new, and may receive the harsh criticism innovations ever provoke. I am not insensible to the opinions of my professional brethren. I desire their approval. Many on whose judgment I rely believe in true respiratory murmur as well as myself. But, wishing above all things for the establishment of truth, I submit the whole subject to this learned Academy, and through it to the profession."

Art. 45.—*Contributions on the Pathological Anatomy of the Pleura.*

By Professor E. Wagner, of Leipsic.

(*Archiv der Heilkunde*, xi. p. 43 ; *Schmidt's Jahrbücher*, No. 10, 1871.)

The author of this contribution gives in the first place a short sketch of the normal pleura of man.

The costal and intercostal pleura presents a single layer of epithelial cells with from four to seven angles, with an average diameter of 0·016 millimetre, and each containing a distinct nucleus.

The small openings between the epithelial cells leading from the sac of the serous membrane into the lymph-capillaries which have been seen by Recklinghausen and Dybkowsky have not been found in man by Professor Wagner.

The pleura both in its costal and its intercostal layers contains lymphatic vessels, and indeed in almost equal numbers and extent and with similar arrangement in both layers. The number of these lymphatics is so great that when they are moderately filled the pleura at many places seems to be almost completely covered. Their extent is much more considerable than that of the blood-vessels. They take on the whole two directions, one nearly parallel to the long axis of the ribs, the other more or less perpendicularly to those lines. These lymphatics are arranged in double and here and there in threefold layers. The

superficial layer fills up the gaps in the so-called basement membrane lying under the epithelium. Below this layer is the deep-seated network of lymphatic vessels. These two layers are connected at many places.

One will be most readily convinced concerning all these conditions by injected preparations. With regard to the intercostal portion of the pleura Dybkowsky has brought forward sufficing proofs of the existence of pleural lymphatic vessels, but he states that with the exception of some large communicating branches there are no lymphatics in the costal layer of the pleura. Professor Wagner opposes this statement, since in men and also in rabbits and guinea-pigs he has seen this double layer of lymphatics both in the costal and in the intercostal pleura.

The reticulated basement membrane—that is, the very open layer of connective tissue lying between the pleural epithelium, and the most superficial layer of the lymphatic vessels, over and in the meshes of which the epithelium is spread, is to be found both in the costal and the intercostal layers of the pleura.

The blood-vessels of the pleura may be rendered visible by artificial injection and through hyperæmia; and most frequently, when the latter condition is associated with a slight degree of recent fibrinous inflammation. If a portion of pleura, after an artificial injection of the lymphatic vessels, be placed in a solution of chromic acid, one will often perceive at the same time a natural injection of the blood-vessels. Good preparations of undistended blood-vessels may be obtained by placing pieces of pleura in a mixture of alcohol and hydrochloric acid.

In pleurisy with fibrinous exudation the exuded material consists of a fluid and of a solid portion.

The *fluid* portion of the exudation is absent only in very recent cases. It lies partly free in the pleural cavity, and partly in the macroscopic and the microscopic meshes of the solid exudation.

The solid portion varies according to the duration and the nature of the exudation. In one class of cases the pleura is covered with a perceptible smooth or indistinctly reticulated layer, of a greyish or yellowish-white colour, which can be readily peeled off. These are the distinctive characters of genuine fibrinous exudation.

In the most recent cases of fibrinous exudation (those of twenty-four or thirty-six hours' duration) of pure fibrinous pleurisy, it sometimes occurs that not a single drop, or but a very small quantity, of fluid exudation is to be found in the pleural cavity. Only an excessive injection of the blood-vessels, diminished lustre of the pleura, and frequently recent terminal pneumonia, together with distinct exudation on the corresponding portion of the pulmonary pleura, direct attention to the presence of a parietal pleurisy in its first stage. In such cases the microscope occasionally, though not often, shows that the pleura is covered by an evenly thin, shining, and fibrinous substance, from which numerous cotyledonary masses project into the pleural cavity.

In a great majority of cases the fibrinous exudation forms a network, the meshes of which vary much in thickness, and enclose large and circular spaces, in which epithelial elements lie. Most of these networks present rounded and irregular projections, by means of which the exudation is probably united to the subjacent layer of pleura. In very recent cases of this kind no exudation or pus-corpuscles are visible.

In cases of recent fibrinous pleurisy, the pleural epithelium probably remains at rest under the layer of solid exudation; the cells usually remain unchanged, but occasionally are found to be swollen.

Professor Wagner describes some peculiar changes in the epithelium, near the fibrinous exudation, at parts which, to the naked eye, seem to be quite normal.

The pleural lymphatic vessels, with very few exceptions, are dilated. In a few cases these vessels are not filled with fluid, but present another condition. Here there is a connexion between the above-described meshes of the fibrinous exudation with the microscopical contents of the superficial pleural lymphatics.

In cases where a thick layer of fibrinous exudation has been formed, the close examination of their sections shows that there is a microscopic, as well a macroscopic, network. The coarse meshes of the network are made up of closely-packed, stretched, and fibrous formations, most of which present much lustre. The fibrous nature of this structure may be proved by boiling or submitting it to the ordinary chemical reagents. In many cases this arrangement of the fibrinous exudation is not to be seen; but the deposit consists of a loose spongy mass, composed of fine fibrinous threads, the interspaces of which generally contain fluid, and here and there some cellular elements.

The lymphatics of the pleura then most frequently undergo simple dilatation, and are filled by fluid or finely-molecular contents. This dilatation does not affect all the lymphatic vessels with the same frequency and to an equal degree. Whilst in cases of recent fibrinous pleurisy the superficial lymphatics are slightly or widely dilated, in cases of older fibrinous pleurisy, with a simultaneous thick fibrinous exudation, these superficial lymphatics remain unaffected; but on the other hand, the horizontally-disposed lymphatics in the sub-pleural, together with the proper lymphatic trunks, are widely dilated.

Professor Wagner in consequence of his investigations holds with the old view concerning the origin of the fibrinous exudation, and believes that the fibrine leaves the hyperæmic blood-vessels in a fluid form, and whilst in this form passes through the layer of pleural structure and the pleural epithelium, not only through the so-called stomata, and when it has arrived at the surface of the pleura separates into a fluid and a solid portion.

In recent cases of fibrinous pleurisy the special tissue of the pleura and usually also the sub-pleural tissue remain unchanged. In some cases however the sub-pleural connective tissue appears to be swollen and œdematous, and is sparingly studded with lymph-corpuscles. In this condition the blood-vessels of the affected tissue become clearly visible. In older cases, on the other hand, both layers of the pleura are regularly studded with free nuclei and colourless blood-corpuscles. Whence the former are derived, Professor Wagner does not know. Proliferation of the connective-tissue corpuscles cannot be distinctly observed.

Of the greatest interest clinically is the question of the connexion between the contents of the pleural sac and the gaps of the fibrinous exudation on the one hand, and the contents of the lymphatics on the other. Precise explanations on this point can be obtained only from pathological experimentation, by which a sero-fibrinous pleuritic exudation might first be produced, and then fluid or solid substances injected

into the pleural cavity be found in the pleural lymphatics, and in the urine, &c. Researches of this kind fail, in consequence of the impossibility of establishing a sero-fibrinous exudation. Hitherto fibrino-purulent pleurisy has always been obtained. Professor Wagner succeeded in recognising injected ink in the lymphatics of the costal and intercostal pleura, although only at isolated small spots.

The connexion of the interspaces of the fibrinous exudation with the pleural-lymphatic vessels in many cases of pleurisy may be shown by fortunate sections in which only the epithelium of the pleura separates the cavities in question. It is also shown by injections of the pleura; the Prussian blue in the lymphatics and that in the cavities of the fibrinous exudation form a network which is either quite continuous or interrupted only at points corresponding to the pleural epithelium, which network during the process of injection first makes its appearance at different spots on the free surface of the exudation.

Finally, the above view is supported by cases in which the fibrinous exudation may be seen within the tubes of the lymphatics. Besides the connexion between the contents of the lymphatics and the fibrinous interleaving lines, there is also in these cases a continuity between the interspaces in the fibrinous exudation on the superficial surface of the pleura and the calibre of the lymphatics.

Fibrino-hæmorrhagic pleurisy differs from the ordinary fibrinous form in the fact that the interspaces of the fibrinous exudation are nearly or entirely filled by red-blood-corpuscles. In one case examined by Prof. Wagner, various parts of the pleural tissue were studded here by exudation corpuscles only, here by red-blood-corpuscles only, and there by both forms of cells, and generally so profusely that the fibrous tissue was scarcely visible. The lymphatics were dilated and filled with clear fluid, the blood-vessels also were dilated and much distended. In another case in which hæmorrhagic fibrinous pleurisy had been associated with croupous pneumonia, the lymphatics were likewise filled with a very fine cloudy molecular substance, in which were deposited numbers of red-blood-corpuscles.

Prof. Wagner has not been able to follow out microscopically the healing processes in the various forms of fibrinous pleurisy. The manner of disappearance of the fluid exudation can be readily recognised in those cases where the lymphatics are dilated and not filled with fibrinous material. The mode of reabsorption of the fibrinous exudation has not yet been satisfactorily determined. In two old cases of pleurisy, Prof. Wagner found that the exudation was clouded by fat molecules, and that some interspaces contained cells that had undergone fatty degeneration, and others a greyish-brown finely molecular mass, resembling stagnant chyle. In both cases the costal, intercostal, and pulmonary pleuræ were thickened and composed of firm fibrous connective tissue and a few blood-vessels. On many grounds it is probable that the absorption of the fibrinous exudation takes place very slowly. From clinical observation it is well known that an evident rubbing sound may in some cases be heard months and even years after the removal of fluid exudation; and even absence of this rubbing sound is no sufficient proof of the removal of the fibrinous exudation.

Purulent Pleurisy.—The great majority of cases which on cursory or

even a close examination with the naked eye seem to be those of pure purulent pleurisy, are really cases of fibrino-purulent exudation.

Prof. Wagner has not investigated the so-called free portion of the exudation found in the pleural cavity. The layer of exudation lying on the surface of the pleura, which resembles pus of some consistency, usually presents under the microscope pus-corpuscles enclosed in a delicate fibrous network. The arrangement sometimes bears the closest resemblance to that of a section of membrane in laryngeal croup. In other cases the purulent deposit presents a few pus-corpuscles almost hidden by abundant albuminous and fatty molecules. In very rare cases the pleura is covered by pure pus presenting here and there a few blood-corpuscles. On examining fine sections it will generally be found that the epithelium below the purulent exudation is partially or quite absent. On examination, however, of extremely fine sections, or of those peeled-off layers of deposit, the epithelium is visible and, as it seems, in its entirety. The epithelium therefore, sometimes remains unaltered, but at others the cells are filled by albuminous and fatty molecules, and are increased in size. The epithelial cells in the neighbourhood of these changes are sometimes found to be extremely small, as if from compression. The blood-vessels of the pleura are much dilated and fully distended, and reach as far as the epithelium. In most cases the lymphatic vessels, chiefly those in the deep horizontal network, are also dilated and their epithelial cells undergo similar changes to that on the superficial surface of the pleura. The pleural lymphatics, owing to swelling of their epithelial cells, were very clearly visible in one case of a patient who died from erysipelas, after injury to the arm. The pleural epithelial cells were also much swollen. The pulmonary and parietal pleuræ were loosely joined together, although no exudation could be observed either with the naked eye or with the microscope. Similar swelling of the epithelium without microscopic changes in the pleura was observed in two cases of septicæmia.

Art. 46.—*Treatment of Asthma.*

By J. Hale, M.D., of Owensborough, Kentucky.

(*American Practitioner*, February 15.)

This prescription is particularly recommended in cases of asthma, by Dr. Hale: ℞ Ether. sulph. ʒiss; tr. lobeliæ, ʒj; tr. opii, tr. stramonii, āā ʒiv. M. S. Teaspoonful every hour or two until the dyspnœa is relieved.

Art. 47.—*Cod-Liver Oil in Whooping-Cough.*

By J. Prestwich, L.R.C.P., &c.

(*The Lancet*, Dec. 9, 1871.)

In this paper Mr. Prestwich reports a few cases selected from more than thirty in his own practice, in order to show the value of cod-liver oil in this complaint. The improvement following the use of the oil in Mr. Prestwich's own practice has been such that for some time he has

considered it as a specific for whooping-cough. As is well known, the spasmodic attacks of this complaint are almost always preceded for some days by inflammatory or catarrhal symptoms. During this stage it has been Mr. Prestwich's usual practice to treat all cases as ordinary attacks of catarrh, and afterwards to administer the oil. A fact worthy of notice, the author states, is that the majority of children had considerable enlargement of the concatenate glands; and the consequent reduction in the size of these glands may account to some extent for the benefit derived. It is also a remarkable circumstance that not one death has occurred where the oil has been administered and has been retained on the stomach.

Art. 48.—*On the Use of Chlorine Water in the Treatment of Diphtheria.*

By W. G. Balfour, M.D., of Montrose.

(*Edinburgh Medical Journal*, Dec. 1871.)

Chlorine water, which is prepared by adding hydrochloric acid to chlorate of potash, and adding water, has been successfully employed in the treatment of scarlet fever, its efficacy having been supposed to depend upon its disinfecting properties; but Dr. Matthew Gairdner, of Crieff, introduced its use in diphtheria, and Dr. Balfour, while acting as his assistant, became aware of its remedial powers in that disease. He adduces several cases in support of his recommendation of chlorine water, and particularly mentions the case of a family living near Crieff, where four of the children suffered from diphtheria, and were all treated with chlorine water, stimulants, and milk; three recovered, and one died; and the unsuccessful result in this last instance is attributed by Dr. Balfour to the neglect of the mother in not giving the remedy. In another case, which was that of a child three years of age, the symptoms of diphtheria were well marked, and a little ipecacuanha wine was given with temporary relief, but as the symptoms soon returned, the chlorine water was administered in two-drachm doses every two hours. After several vicissitudes, the child had a violent paroxysm of coughing, followed by expectoration of something which was probably the false membrane, but which was swallowed, and immediately afterwards the child was relieved, and ultimately recovered. Dr. Balfour thinks that the remedial action of chlorine in diphtheria and scarlet fever is more general than local, and that when taken internally, it is absorbed into the blood, and there neutralizes the morbid poison; but whatever the theory may be, Dr. Balfour has found the treatment very successful in practice.

Art. 49.—*Hæmoptysis in Consumptive Patients.*

By D. Francis Condie, M.D., of Philadelphia.

(*American Journal of the Medical Sciences*, January.)

Hæmoptysis, in the description of tubercular consumption given in the books, is very generally enumerated as among the most common of its prodromes, and as a predominant symptom during some period of its

course. This, so far as Dr. Condie's own experience goes, is an error, and one very liable to mislead those who have not studied with close attention the disease at the bedside of the sick. Of three hundred and sixty-nine cases of tubercular consumption, notes of which the author has kept, hæmoptysis occurred in eighty-seven (that is, in about 24 per cent.). In two hundred and eighty-two of the cases it neither preceded nor was present throughout the attack. The absence, therefore, of hæmoptysis, is not to be received in any case as an indication of the absence of pulmonary tubercles, nor can the occurrence of pulmonary hæmorrhage be received as an indication of present tuberculosis of the lungs.

In the eighty-seven cases of consumption in which pulmonary hæmorrhage occurred under Dr. Condie's observation, the hæmorrhage preceded in forty the first symptom of the deposit of tubercular matter some considerable time—say two, three, five, six, or even twelve months. In some cases, however, it preceded the indications of tuberculosis only a few days, in others, again, it occurred at the very onset. In twenty-nine cases the hæmorrhage occurred at different periods during the progress of the disease, and in its latter stage in eighteen cases in which the presence of cavities in the lungs was detected upon auscultation.

It appears to Dr. Condie, that, in the form of consumption for which, in a former communication, he suggested the name of *spurious*, hæmoptysis is much more liable to occur than in the tubercular form, as well preceding the attack of bronchitis or pneumonia, at or soon after its occurrence, or in the advanced—chronic—stage when it has assumed the characteristics which assimilate it with one of tubercular consumption.

As to the cause of the hæmoptysis which is met with in those who are labouring under tubercular consumption, or who are predisposed to an attack of the disease, it varies in different cases, and certainly at different stages of the disease. In some cases it is evidently the result of a state of hyperæmia or congestion of some portion, of more or less extent, of one lung or both, the overloaded vessels relieving themselves by a percolation of blood or by a rupture of the coats of one or two of them. In other cases, the hæmorrhage is caused by the opening from ulceration in its neighbourhood, of an artery; in others, again, it has been traced to a slow but constant exudation of blood from the mucous coat of the more minute ramifications of the bronchial tubes. In the latter case, the matter expectorated consists of a mucoid fluid intimately mixed with blood, giving to the sputa a colour like that of the rust of iron—sometimes the sputa have very much the colour and consistence of currant-jelly. So far as Dr. Condie could judge, hæmoptysis from the first-named cause was most generally found to precede the deposition of tubercular matter or to occur in the early stage of tuberculization, or when the circulation in some part of the lungs is impeded by a large cluster of unsoftened tubercle. Hæmorrhage from ulceration may occur at any time in the course of the disease, while the bronchial hæmorrhage is most generally confined to cases of tubercular bronchitis or pneumonia, though it may be met with in the latter stage of uncomplicated cases of pulmonary phthisis.

Occasionally, the hæmorrhage which precedes the attack of pulmonary consumption, or which occurs towards its close, is quite profuse,

and has a tendency to recur again and again, at shorter or longer intervals. During the course of the tubercular attack, the hæmorrhage met with is seldom to any great extent, and when once it ceases, it seldom returns.

What influence, for good or for bad, the occurrence of pulmonary hæmorrhage in cases of consumption has on the latter, the data in Dr. Condie's possession are not sufficient to allow him positively to determine. Judging, however, from what facts he has been enabled to collect, he should infer that the influence exercised by the hæmorrhage, one way or the other, upon the character or duration of the disease, was by no means very decided. It may be, that a moderate hæmorrhage occurring just preceding the development of tubercles may have a tendency rather to retard than to promote such development. On the contrary, however, when the discharge of blood is considerable and repeated, an injurious effect may be anticipated. When hæmorrhage occurs during the course of tubercular phthisis, even if only to a moderate extent, it cannot fail indirectly to have an injurious effect, by standing in the way of the patient taking that amount of active out-door exercise which is so important an item in the management of all cases of tubercular deposit, and at the period when most benefit is to be derived from such exercise. Profuse hæmorrhage from the lungs occurring in the latter stages of tubercular consumption—which fortunately is rarely the case—could not fail by its debilitating effect to accelerate a fatal result.

Art. 50.—*On Tuberculous Phthisis.*

By E. Long Fox, M.D.

(*British Medical Journal*, October 21, 1871.)

Dr. Fox sums up his remarks as follows:—

1. There are several forms of disease included under the head of phthisis.

2. Tubercle, whether of the lungs or of other organs, is due to a constitutional disease; and this is shown by death occurring without post-mortem results sufficient to have caused it.

3. Tubercle often exists quite independently of caseous deposits or vomicæ.

4. This morbid condition is inheritable, but may be developed *de novo* by debilitating influences.

5. Its possible manifestations at all ages, and its frequent non-manifestation until the age of puberty, are only analogous to what is seen in other constitutional and inheritable diseases.

6. Chronic pneumonia found associated with miliary tubercle is not connected with it as cause with effect. The tubercle only becomes developed in cases in which the patient has previously had the tuberculous taint of constitution.

7. Some fatal chronic pneumonias may owe their irremediable properties to the same constitutional weakness, even where no miliary tubercle is discovered after death.

8. In general, non-tuberculous phthisis can be distinguished from tuberculous by clinical phenomena, and especially by the use of the thermometer.

Art. 51.—*Specimen of Miliary Tubercle, Softening to Vomicæ, in a Case of Acute Tuberculosis.*

By Walter Moxon, M.D., F.R.C.P.

(*Medical Times and Gazette*, March 2.)

At a meeting of the Pathological Society on February 20th, Dr. Moxon exhibited a specimen of miliary tubercle, softening to vomicæ, in a case of acute tuberculosis. Dr. Moxon said he believed this was the first specimen deliberately exhibited to the Society as tubercle of the lung. This, he supposed, must have one of two reasons—either that long ago everybody knew enough about tubercle, or that even now no one feels sure enough concerning it. He had looked back through the writings of many authorities to learn those proper characters of tubercle which appeared so long to have satisfied the members of the Society, but always he found there was the same supposition that tubercle was a matter of course; and thus far it appeared clear that every one did know all about tubercle long ago. From this point of view the neglect of the subject by the Society was another proof of its pathological completeness, and yet there were some facts not quite in concord with so satisfactory an account of the matter. He specially alluded to three of those facts. Dr. Cayley had shown microscopic specimens of tubercle in the liver, &c.; Dr. Bastian had shown specimens to prove the histological identity of tubercle and early fibroid disease; and a committee, which had decided in favour of the tuberculous nature of some disease consequent on inoculation in the lower animals, had stated the histological grounds of their opinion. Now, he had found, on comparison of the characters described by these gentlemen, that they were very far from corresponding in the three cases. The characters relied on by the committee were a good deal fresh and unusual, and differed much from the descriptions by Dr. Cayley, and these from Dr. Bastian's; who, whilst saying on the one part that a tubercle had the same structure as early fibroid tissue, on the other part said he agreed with Virchow's description of tubercle as identical with lymph-gland tissue. From all this it would appear that there is yet a great deal that is very unsatisfactory in our knowledge of tubercle, and especially in its histology. In his examinations of tubercle he had found what Dr. Cayley described, and also he had seen the early fibroid-like appearances that Dr. Bastian represented; but he had never been able to make out anything like lymphatic gland. Of course, if by lymphatic gland you only mean cells with filamentous intercellular matter, then other cells with filamentous intercellular matter would be the same. But when we have regard to the characters of the cells and the consistence of the intercellular matter, or the distinctness of its filaments, then the thing becomes different. Every one knew that a lymphatic gland is very complex, and that in the follicular tissue of the gland there are not merely cells and filaments, but that the filaments are themselves connected with stellate

cells, from which the cells among the filaments appear to arise; further, these free cells are indistinguishable from pus corpuscles, and therefore cannot be very like tubercle corpuscles. If you brush out under water a section of gland and a section of tubercle, the first becomes a beautiful plexus of fine fibrils, whose meshes have been brushed empty; but the other all brushes away, and no filaments remain—neither, indeed, can any filaments be seen before brushing. Hence he thought Virchow's comparison with lymphatic gland most unsatisfactory, and thought that at present the naked-eye appearances, taken altogether, were of infinitely more consequence than the microscopic appearances. By "taken altogether," he meant that the position, arrangement, and distribution of the tubercles in question, along with their physical characters, are of important weight in settling the tuberculous nature of any case. In the case which he exhibited, it was specially to the naked-eye appearances that he would draw attention. The case was that of an industrious, steady young shoemaker, who, after suffering for five months with urinary troubles, which shortly were, in their order, hæmaturia, hydruria, dysuria, and pyuria, got chest symptoms and hectic, and sank within a few weeks of the appearance of these. Dr. Moxon found at post mortem extensive scrofulous disease of the left kidney, bladder, and prostate, which were dreadfully ulcerated; but besides this there was general tuberculosis—minute tubercles crowding the liver, spleen, kidneys, and lungs. The state of the lung deserved settled attention, because its tubercles showed very beautifully a gradation from the condition of minute grains at the base of the lung up to little vomicæ of the size of peas in the apex, the intermediate gradations of enlargement and central softening, conclusively showing that the tubercles—large, intermediate, and small—were all of one nature, while the small ones and the scattered distribution of all showed their identity with the miliary tubercles so generally distributed in the body; thus the case offered an example of genuine miliary universal tubercle, running in the lung through the common course of softening into vomicæ. He would shortly state what he conceived to be the significance of the case, which had a very special point in opposition to the views now known as those of Niemeyer, which views are just now meeting with an extent of favourable acceptance which he thought they were not entitled to, but rather obtained through our natural kindliness toward foreign notions when they visit us. He understood that Niemeyer's views had no such weight in their own country. The view proper to Niemeyer is this, that the process which produces vomicæ in the lung is from the first inflammatory, and that tubercles in the form of little grey knots were apt to supervene secondarily. The point of the present case lies here, that the softening into vomicæ present in it was evidently a secondary process in, of, or about the tubercles. The chief ground for accepting Niemeyer's view lies in the fact that secondary miliary tuberculosis, or general tubercle, as it is called, almost invariably kills while the tubercles are small, so as to allow of Niemeyer's school regarding them as distinct from the softening deposits which produce vomicæ. In this case, however, life was prolonged until tubercles, which were unquestionably true tubercles in Niemeyer's sense, and secondary to scrofulous inflammation in another part, went on themselves to soften into vomicæ; thus proving that the

subsequent history of Niemeyer's secondary tubercles is to go on and form those same cavities which his view assumes to be of a distinct nature when found in common phthisis. The case affords proof that the same vomicæ, which Niemeyer calls primary catarrhal pneumonia (which he holds to be distinct in kind from tubercle, but liable to cause tubercle, as one thing causes another different thing), do arise from changes in or about secondary tubercle. Here we have a strong ground for holding to Laennec's belief—namely, that the vomicæ of common phthisis arise through the natural changes of tubercles. Of the essential truth of that view, Dr. Moxon entertained no doubt whatever. The specimen was accompanied by a full-sized painting of the lung, and charts of the microscopic appearances with high and low powers.

(c) CONCERNING THE CIRCULATORY SYSTEM.

ART. 52.—*On Diseases of the Muscular Walls of the Heart.**

By RICHARD QUAIN, M.D., F.R.C.P.

(*Medical Press and Circular*, April 3.)

LECTURE I.

Dr. Quain, in commencing his first lecture, observed that diseases of the walls of the heart have, in the past, been too much subordinated to affections of its valves. Clinical study of the diseases of the walls, however, teaches us that on them depend all the really serious effects of heart disease, while extreme disease of the valves may produce no symptoms so long as the muscular tissue of the heart is adequate to the work it has to do. As the walls are strong and efficient, or as they are weak, dilated, and inefficient will be the phenomena of disease with which we have to deal.

Enlargement of the heart is the first pathological state deserving attention, and is usually due to a combination of hypertrophy and dilatation. After glancing at the history of the subject, the lecturer described three forms of hypertrophy with which the cardiac walls may be affected. (1) Simple muscular hypertrophy, the characters of which are well known. (2) Connective tissue hypertrophy—a form not yet definitely recognised, although vaguely alluded to by various writers. The connective tissue is greatly increased in quantity, and seen in all conditions of development, surrounding and comprising the muscular fibres. The walls may or may not be altered in colour, but they are increased in thickness and far more dense than in the first form. Its cause is probably a chronic inflammation of the interstitial connective tissue. (3) Fatty hypertrophy, often confounded with fatty degeneration. The muscular fibres are tolerably healthy, but the fat between them is greatly increasing in quantity, and is most abundant towards the outer surface. The other factor in cardiac enlargement is dilatation, the character and common origin of which are well known.

The causes of enlargement of the heart are: (1) Agencies acting

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* Dr. Quain's Lumleian Lectures at the Royal College of Physicians, March, 1872.

through the nervous system. The influence of the nervous system on the heart is seen in the effects of shock, alarm, anxiety. Constant excitement leads to over-action, and this to enlargement. Statistics furnished by Dr. Farre show that during the last twenty years there has been a very marked increase in the number of males between twenty and forty-five who die of heart disease, while in the number of males under twenty and of females there has been little change. Other nervous influences lead to excited action, as those reflected by sympathy from other viscera. (2) Agencies acting mechanically lead to hypertrophy. Increased development of muscular tissue ensues on an increased demand. Such influences are the excessive and habitual exertion—as in many laborious occupations and athletic sports in excess—and obstruction in the circulation either at the heart itself, as in valvular disease; in the great vessels, as in aortic contraction; or in the distal circulation, as in Bright's disease, or in pregnancy. (3) Agencies acting directly on the nutrition of the heart may cause its enlargement, though these have more frequently the opposite influence. The blood state in Bright's disease may co-operate with the distal obstruction in causing hypertrophy. In adhesions after pericarditis the heart is commonly enlarged from increase, as the lecturer believed, in connective tissue as much as from increase in the muscular element. Cases of cardiac enlargement, which are not referrible to any known cause, are probably, in many cases, also examples of the connective tissue hypertrophy. This opinion, Dr. Quain said, previously formed, was completely confirmed by an examination of one of these hearts, of an enormous size, which has been for many years at St. George's Hospital, and was found, on examination, to present a great increase in the connective tissue.

LECTURE II.

In his second lecture Dr. Quain continued his account of enlargement of the heart. He first described the effects, local and systematic, of the three forms of hypertrophy as far as they are known, contrasting the increased power of the first with the practical weakness of the two other forms, in which, though the muscular tissue may be increased, its power is spent in overcoming the obstacles to its free action. He then passed to the consideration of certain special effects of cardiac enlargement. First, its relation to cerebral hæmorrhage. From statistics which he had collected, the following conclusions were drawn:—First, that in cases of apoplexy enlargement of the heart is more frequently present than disease of the cerebral vessels. Secondly, that when the heart is enlarged in apoplexy, the cerebral vessels are as often healthy as diseased. Thirdly, that when both enlargement of the heart and diseased vessels are present, valve disease is found only in two-fifths of the cases. Secondly, its relation to phthisis. Enlargement of the heart was found to be present more than three times as frequently in men dying of phthisis as in women. The duration of life in phthisis seemed greater on an average in the cases in which the heart was enlarged, the percentage of deaths under one year being only half that in cases in which no enlargement was present. Lastly, heart disease seems to have no influence in promoting hæmoptysis in phthisis. Thirdly, its relation to renal disease. The kidneys were diseased in thirty-four per cent. of

cases of heart disease collected by Dr. Chambers. The result is due to the influence of chronic congestion.

After a few remarks on the diagnosis of cardiac enlargement and its causes, Dr. Quain passed on to the subject of treatment. He insisted strongly on the importance of an accurate and early diagnosis and thorough investigation into the action of medicines, by which our faith in physic would become greater, and the list of curable diseases be lengthened. In the three forms of hypertrophy, we must counteract or remove as far as we can the causative conditions. In dilated hypertrophy we must lessen the intra-cardiac pressure by diminishing the volume of the blood, and at the same time purify it, by acting on the secretory organs, purging, &c.

LECTURE III.

In the third lecture Dr. Quain first described fatty degeneration of the heart. After glancing at the naked eye and microscopical character of the affection, he stated his belief that it was due to a non-vital chemical or physical change in the composition of the muscular fibres. Such a change is seen in the formation of adipocire, especially when we consider it in association with the slow fatty degeneration which takes place in preparations preserved in spirit. There is a remarkable analogy between the character of this process, the formation of oil in olives after gathering, and the slow series of changes which occur in dead vegetable matter which result in its transformation into coal. Wagner's observations on the occurrence of fatty degeneration in albuminous substances within the peritoneal cavity, corroborated by Michaelis, were conclusive, though objections have been raised to them. Still more striking evidence that the process consists of a change in nitrogenous compounds is afforded by the observations of Mr. James Salter on the fatty degeneration which occurs in the pulp cavities of a necrosed tooth. These facts, the lecturer believed, were entirely opposed to the view advocated by Dr. Ormerod, that the fat is a fresh formation, as such, from the blood.

The causes of fatty degeneration are, first, general states of impaired nutrition and depressing adynamic diseases; and, secondly, local conditions, especially atheroma of the coronary arteries, and the occurrence of endo- and pericarditis. A diseased artery has been found going directly to a local patch of softening. Congestion of the coronary veins may tend to produce it. It is more than twice as frequent in men as in women, and increases in frequency as life advances. The change interferes much with the functions of the organ, its diminishing power being shown in certain nervous symptoms, especially syncope (a common cause of death), and in shortness of breath and attacks of cardiac pain, sometimes of original character. The local signs are those of weakness, feeble impulse, faint sounds, and weak, irregular pulse. These symptoms, occurring in connexion with its causative conditions, will enable the diagnosis to be made. In treatment, tonics and rest to the heart are the chief means to be employed, and by their aid great improvement may often be effected.

Rupture of the heart was next considered. The size and appearance of the rupture vary much: it may be so small as only to admit a probe,

or it may be an inch or two in length. Its character depends on its local cause. The great majority of the cases occur in persons over sixty years of age. The immediate cause of the accident is some increased strain on the heart, usually determined by physical exertion or mental excitement. Fatty degeneration is the local condition which usually is found in association with it. Death sometimes occurs instantly, sometimes is preceded by symptoms of cardiac suffering, and failure, more or less intense, and lasting for a few hours, or, in rare cases, for several days. The latter cases have been those in which the process of tearing through was slow, or the rupture was through the septum. In about three-quarters of the cases the rupture is in the left ventricle; the right ventricle, right auricle, septum, and left auricle, being affected much less frequently, and in the order named. The blood usually escapes into the pericardium, and there separates into clot and serum, the former surrounding the heart. The accident is always fatal. Wounds in healthy hearts have sometimes healed.

Aneurism of the heart may exist within the cardiac wall, or project on its outer surface, sometimes to such an extent as to resemble a double heart. The sac is formed by the thinned cardiac walls, the muscular tissue often being greatly lessened, and the conneetive tissue increased. Sometimes bony plates are found in it. The pericardium is usually adherent. It occurs with equal frequency at all ages, but is much more common in men than in women. Its origin is probably some local degenerative change, inflammatory in nature, permitting dilatation; sometimes an abscess has opened into the heart. It usually occurs at the apex or base, most frequently the former. Symptoms are often absent, and when present are not special, being those of cardiac distress, and would only indicate the nature of the affeetion in conjunction with special local signs. It is nearly always fatal, sometimes slowly by interference with the heart's action, sometimes suddenly by rupture of the sac.

Art. 53.—*On the Bruit du Diable.*

By A. Duchek, M.D., Professor of Medicine in the University of Vienna.

(*The Lancet*, February 3.)

There are to be found murmurs in the heart and the veins which do not take their origin in organic changes of the heart and the vessels—as, for instance, with men and animals exhausted by loss of blood and attendant anæmia. In the same degree as the loss of blood and the paleness of the skin proceed, these murmurs appear in the heart and the veins of the throat. If we touch, in severe cases, the vena jugularis with the finger, we perceive a continued vibration, like that of a string. This vibration is not interrupted, as we observe it in arteries, but continued. On pressure on the upper part of the vena jugularis, both the perception of the vibration and the acoustic evidence of a murmur disappear, proving it to be merely venous.

The formation of the sounds in the heart is influenced by two agents:

the conditions of the valves of the heart and the vessels on the one hand, and by the pressure produced by the blood-stream upon them on the other. As we have, in such cases of anæmia, no symptoms permitting us to diagnose changes in the vibrating mediums, we are induced to seek the origin in the cause itself which produces vibration—namely the pressure of the blood. In disorders attended by these murmurs (as anæmia, chlorosis, loss of blood), the propulsive power of the heart is unchanged, though its contractions are more numerous, while the blood, either in its quantity or quality, is lessened, and consequently the pressure exercised by it in the circulation is diminished too, so that the impulse given by the blood-column is not sufficient to develop in the valves or the arterial walls the amount of tension necessary for the formation of the sound, which under normal circumstances makes its appearance in these vibrating mediums, but in these cases is lowered into the acoustic impression of a murmur.

In this way we explain the murmur in the heart. It is more difficult to find its cause in the vena jugularis. Some have attributed it to the arteries; but this is contradicted by its disappearance on pressure on the jugular vein, and by its continuity. This bruit is modified by two causes. It grows stronger at regular intervals, corresponding to the pulse, being strengthened by the sound of the carotids; we call these simply moments of reinforcement. The second cause is the respiration, which, when accelerated, influences the murmur.

What is the origin of this murmur? In the heart we explain all sounds and murmurs by vibrating membranes. We shall not suppose that in the veins a whirl of blood is their cause, nor the pushing of the blood against a narrow entrance. The jugular vein behind the insertion of the sterno-cleido-mastoideus is wider than elsewhere, forming the bulbus. Beneath this bulbus are valves in the narrowest part of the vein. These valves have a most important influence upon the whole circulation of blood. The pressure in the thorax being too high, they approach one another, and in this way oppose the further entrance of blood into the thorax. The part above them must be, consequently, dilated, as we remark it in cases of stagnation in the heart, the jugular vein being distended, and the jugulum growing gradually more shallow. The impulse of the blood makes these valvulæ vibrate, and causes the murmur. When the blood flows slowly the impulse is too weak, and no murmur is to be heard, just as a slight touch is not sufficient to make a string vibrate audibly. The murmur arises when the valvulæ are half opened and put into vibration by a sufficient rush of blood. Another peculiarity is to be mentioned. The bulbus is attached to the clavicula behind the articulatio sterno-clavicularis; and thus being stretched out, it facilitates the flow of the blood. If the pressure in the thorax increases, by valvular failures, emphysema of the lungs, &c., the stream flows slowly, and therefore we do not find these murmurs attending disorders of the intra-thoracic organs, and hence the general view that this bruit excludes insufficiency of the valvula mitralis. Another consequence of this fact is, that these murmurs are not to be heard in persons affected by anæmia when they become the subjects of pneumonia or exudative pleurisy, and that they reappear at recovery. The two necessary requisites, then, are a speedy circulation of blood and a

normal pressure of the blood in the thorax. This view affords us also an explanation of the murmur growing stronger when the respiration is more hurried. The thorax being powerfully dilated, the blood rushes in strong streams towards it, strengthening the acoustic impression. When the respiration is impeded, when it must be forced, the circulation loses the necessary quickness, and the vibration of the valvulæ becomes inaudible.

These murmurs are very rarely to be found along with mechanical changes in the heart. They accompany similar murmurs at the ostia, which are always systolic, never diastolic. They may be perhaps diastolic, but only in the most severe disorders of this kind, where it is impossible to distinguish whether there is only one continued murmur or whether the systolic and diastolic murmur meet and run into one another.

Art. 54.—*On Precordial Dulness.*

By Dr. Debauge.

(*Lyon Médical*, No. 24, 1871 ; *Gazette Hebdomadaire*, No. 2, 1872.)

According to Niemeyer precordial dulness is found entirely on the left side of the chest and is limited usually by the left edge of the sternum. But this assertion hardly accords with what anatomy teaches concerning the topography and the relations of the heart. The central organ of the circulation is far from being situated entirely on the left side of the chest and externally to the sternum. Every one knows that the base of the heart passes beyond the middle line and even reaches for a short distance over the right edge of the sternum. The exact limitation of these relations on the cadaver is more difficult than would be supposed at first sight, on account of the retraction of the lungs which takes place when the chest is opened, and always causes a more or less pronounced displacement of the heart. In spite of this difficulty, M. Sappey has succeeded in establishing that the base of the heart in an average number of instances, reaches on the right side to a point three centimetres from the median line, and consequently between twelve and fifteen millimetres from the corresponding edge of the sternum. The distance of fifteen millimetres between the edge of the sternum and the nearest point on the right side of the heart is that which has been indicated by Prof. Tigri of Rome. Dr. Burresi of Sienna, in order to overcome the cause of error which has been mentioned above, took the precaution before opening the chest to fix the heart by means of long needles which were passed through its walls and then forced into the posterior wall of the thorax. He was able to make out that the maximum distance of the heart from the middle line was between three and four centimetres. These anatomical data accord perfectly with the limits of the triangle made out by Burresi with the pleximeter, which constitutes the area of precordial dulness.

This triangle at the greatest part of its extent is placed on the left side of the chest, but it extends also over the sternum and even as far as the fourth and fifth intercostal spaces on the left side.

There is an inferior border almost horizontal, a left border directed

obliquely from above downwards and from right to left, and a right border with an opposite direction, that is to say, from above downwards and from left to right. It is this last border which commencing above in the third left intercostal space, crosses the sternum and ends at the fifth intercostal space on the left side near the upper border of the sixth cartilage. The right border corresponds to the base of the heart and to the auricles, the left border to the left ventricle and auricle, and consequently corresponds in length to the left side of the heart; the inferior border is in relation with the auricle and the ventricle on the right side, and follows in consequence the line of what is usually called the right side of the heart.

The inferior is the longest of the three borders of the triangle; Burresi states that its average measurement is ten centimetres. The two other bodies, the right and the left, are equal in length, which is about nine and a half centimetres.

Over the greater part of its perimeter the area of precordial dulness can be readily made out by percussion. As the heart is surrounded laterally by the lungs, one can define with the pleximeter along the two superior borders of the triangle, corresponding the one to the base of the heart and to the auricles and the other to the left ventricle, a dulness which contrasts markedly with the sonority of the lungs. But it is not so with the inferior border, that which corresponds to the right edge of the heart and to the auricle and ventricle through which venous blood passes. Here the heart is in relation with the liver, and the precordial dulness is continuous with that of the hepatic gland. Thus along almost three-fourths of the inferior border of the area of precordial dulness one has, before mapping out the situation of the heart, to distinguish between these two kinds of dulness. As the dulness of the liver is much more pronounced than that of the heart, it is possible, with practice and use, to distinguish these two organs from one another. Near the apex of the heart it is no longer the liver but the stomach that is below the diaphragm, and at this point the incomplete cardiac dulness contrasts very greatly with the sonority of the abdominal viscera.

It is not necessary by the bedside to percuss over the whole periphery of the heart in order to obtain knowledge of changes that have taken place in its conformation; the state of dyspnœa associated with the majority of cardiac affections, will not permit us to submit our patients to too prolonged examinations, which they would tolerate with difficulty. It becomes necessary here to find the means of acquiring knowledge as to the state of the suffering organ by reducing as much as possible the number of points of the cardiac periphery which we may percuss. Burresi has limited to three the number of points of the area of cardiac dulness, the position of which ought to be made out by the pleximeter; he contents himself with finding out the situation of the three angles of the triangle. In the superior angle, which in its normal condition is found in the third intercostal space on the right side, he practised percussion along two lines; a horizontal line from left to right along the third left intercostal space, and a vertical line from above downwards immediately extend to the left border of the sternum. The substitution of dulness by pulmonary sonority indicates the seat of this superior angle of the cardiac triangle.

The inferior angle may be discovered by percussion practised from right to left along the fifth intercostal space until dulness is reached, and from above downwards along the right edge of the sternum until the complete dulness of the liver succeeds to that of the heart, which is much less pronounced.

Finally, the left angle, which may be detected by palpation alone, since it corresponds to the point at which the apex of the heart beats, is indicated by the same manœuvre practised horizontally from left to right, either in the fifth or sixth intercostal space, or along the sixth rib, and vertically from below upwards at a distance of two or three fingers' breadth from the sternum.

Burresi has learnt from observation that the anterior angle and the angle on the right side, that is to say, the two extremities of the line of the triangle which correspond to the base of the heart, are found at distances of from three to four centimetres from the median line; that is, between one and two centimetres from the corresponding edge of the sternum. The angle on the left side which corresponds to the apex of the heart, is more removed from the median line; its distance is about six centimetres.

The three angles of the triangle being found, nothing is more easy than to trace its sides, and thus to recognise the changes which have occurred in their length, direction, and mutual relations.

It is perfectly useless to apply the pleximeter over the two superior borders of the triangle; such a proceeding would give no important diagnostic result. But it is not so with the inferior border. The direction of this is changed by alterations of the heart. Professor Concati, of Florence, has remarked, that hypertrophy of the right ventricle gives to the inferior limit of cardiac dulness the form of a curve with an inferior convexity depressed below the line which joins the two inferior angles of our triangle. Hypertrophy of the left ventricle gives a contrary result; it produces a curve, the convexity of which is upwards.

Art. 55.—*Remarks on Two Cases of Disease of the Heart.*

By S. O. Habershon, M.D., F.R.C.P.

(*The Lancet*, December 16, 1871.)

At a meeting of the Clinical Society of London on December 8th, Dr. Habershon narrated two cases of disease of the heart. The first instance was that of a young man aged thirty, who had been accustomed to great muscular exertion, and in whom the aortic valves were rendered imperfect by continued strain. Hypertrophy and dilatation of the left ventricle ensued; and the physical signs of aortic obstruction and regurgitation were accompanied by urgent dyspnœa and by paroxysms of angina pectoris. The mitral valve at length became so stretched that it ceased to act as a valve, and the indications of pulmonary and abdominal congestion became apparent. At this time a triple sound was audible at the apex of the heart, and continued for several weeks—till, in fact, the right ventricle became accustomed to the additional strain thrown upon

it, and beat in unison with the left ventricle. After a time, a systolic bruit at the apex replaced the triple sound. The triple sound was explained by the want of synchronous action between the two ventricles. It has been noticed in rupture of the mitral valve, and also in cases of contraction of that valve; and in this instance it occurred for a short period in connexion with an overstrained mitral valve. The patient became slowly exhausted by the increased embarrassment of the heart and by dropsy.—The second instance was that of a child aged eleven, in whom severe cardiac disease, affecting the mitral valve, followed an attack of rheumatism. Three years previously he had the first attack, and had been ill for a fortnight before his admission into Guy's Hospital, on February 22nd, 1871. There was pain in the limbs; and, in the plane of the mitral, a loud systolic bruit, and a less distinct presystolic one, were audible. He improved in health till about the middle of April (12th), when the presystolic bruit became more distinct; and this indication of fresh disease was shortly followed by severe brain symptoms; vomiting and delirium, with hemiplegia on the left side, suddenly supervened; symptoms of great prostration followed, with convulsive movements of the right side; and, when consciousness was regained, he cried out and complained of pain in the head and in the spine. On the third day he began to rally, and in ten days the paralysis began to lessen, but the hand and arm recovered before the foot and leg. The presystolic bruit also ceased, and the systolic mitral bruit alone remained audible. He left the hospital relieved on June 24th. The presystolic bruit was probably due to deposit on the mitral and consequent obstruction, and increased deposit led to augmentation of the sound. The cerebral symptoms were traced to embolism; and soon after the onset of these symptoms the presystolic bruit was diminished in intensity, as if the mitral, relieved of a portion of fibrinous deposit, acted more freely. The retrocession of the hemiplegic symptoms was in the inverse order from ordinary hemiplegia, from apoplexy—namely, that the arm recovered before the leg and the hand, and the feet before the shoulders and the hips. Very little medical treatment was permitted in this case, and it illustrated in a remarkable manner the natural subsidence of the symptoms of disease as the circulation of the brain accommodated itself to the temporary obstruction.

Art. 56.—*On the Symptomology of Variolous Cardiac Myositis.*

By M. Desnos.

(*Des Complications Cardiaques dans la Variole, et notamment de la Myocardite Varioleuse.* Par MM. L. Desnos et Henri Huchard. Paris, 1871.)

The symptomology of cardiac myositis is not the clearest part of its history. M. Desnos, however, relying upon some very carefully-observed cases, describes three classes of symptoms which he considers to be special to this affection. These symptoms are cardiac, cerebral, and pulmonary.

Cardiac Symptoms.—After some slightly-marked cardiac disturbances the movements of the organ became feeble, and a peculiar *souffle* is heard with the first sound. This *souffle* is soft, deep, diffused, transitory and migratory. The soft character of the sound is explained by its mode of production. It is not due, as in endocarditis, to rugosity of the valve, or to contraction of an orifice, but rather to a pure and simple insufficiency determined by a morbid change in the papillary muscles, or of the portions of cardiac muscular tissue into which these are inserted. These muscles, too feeble to close the valves, close incompletely the auriculo-ventricular orifice. We have here a *souffle* of paralytic origin analogous to those observed by Traube in dogs poisoned by digitalis.

This *souffle* appears at the period when the cardiac adynamia commences. It follows the course of the fatty changes. When the tissue of the heart is more diseased the sound has a tendency to cease.

The two sounds of the heart, the second especially, may be doubled. At a later period the beating of the heart is scarcely perceptible, and is scarcely more than an undulation and trembling, interrupted from time to time by a kind of revival of the contractions: a veritable cardiac ataxy. The softened organ becomes dilated and elongated. The feeble impulse corresponds to the sixth or seventh intercostal space.

The pulse, strong and vibrating at first, diminishes and loses its regularity as the tissue of the heart becomes altered. Still it is not a rare occurrence to observe a marked want of accord between the signs furnished by the pulse and the energy of the cardiac contractions. This want of accord relates not to the strength of the pulsations alone, but also to their number. The debility of the heart and the presence of vascular concretion may explain these different facts obtained by observation.

Cerebral Symptoms.—At the time when there is declared asystoly in cases of variola a peculiar delirium is manifested which M. Desnos subordinates to myocarditis. This delirium is an ultimate phenomenon of the cardiac complication. It is a delirium of depression due to all appearance to cerebral anæmia. It is accompanied sometimes by general or partial convulsions, and a muscular trembling which precedes final coma.

Pulmonary Symptoms.—These are due especially to passive congestion, which results from the feebleness of the pulsations and from the obstructions caused by the bronchial pustules so frequently observed in confluent variola.

Art. 57.—*The Physical Signs of Mitral Stenosis.*

By G. W. Balfour, M.D.

(*Edinburgh Medical Journal,* November, 1871.)

Dr. Balfour maintains that systolic apex murmur is by no means the most distinctive sign of disease of the mitral valves. Such a murmur may be exocardial or endocardial, even produced by regurgitation, and yet the mitral valve be free from disease. The murmur, commonly

known as "presystolic" (although this is not a strictly accurate term) may be considered conclusively pathognomonic of mitral stenosis. The presystolic murmur is most distinctly heard over the mitral area, *i.e.*, within a circle of about an inch, described round the point where the apex impinges as a centre. It is not propagated far in any direction, it is rarely heard above the third rib, and in every other direction its distinct propagation is usually equally limited. The presystolic murmur, is really an auriculo-systolic murmur. By timing it with the carotid pulse (with which the first sound of the heart is synchronous) the murmur will be found immediately to precede and to run up to the carotid pulse. It occupies the time of the auricular systole, preceding the ventricular systole. "In timing this murmur it is obvious that we must employ the carotid, and not the radial pulse, for while the former is always synchronous with the ventricular systole, and apex beat, the latter is, even in health, always delayed to an appreciable extent—one sixth of a second; while in disease, especially such as interferes with the arterial contractility, this delay is notably increased, and sometimes amounts to an entire cardial pulsation." The carotid pulse is a perfectly safe guide, provided our senses are sufficiently educated to appreciate the teachings obtainable by comparing an audible with a tangible phenomenon. The true auriculo-systolic murmur is short, because it sharply coincides with the contraction of the auricles; it is also rough, because it is a direct murmur produced by forcible muscular contraction. The rough presystolic murmur, more frequently than any other, gives rise to a distinct sensation of vibration to be felt over the mitral area (*frémissement cataire*). It is capable of being vocalized by the sounds represented by the letters R-r-r-b, or Vōōt. It is separated from the second sound by a more or less lengthened, but always readily appreciable interval, and it distinctly precedes the apex beat and the carotid pulse, usually running quite up to them; but occasionally separated from them by an exceedingly short, though appreciable interval. Such a murmur is invariably an evidence of mitral deformity, of more or less constriction of the auriculo-ventricular opening. Such a murmur may disappear, but the lesion is permanent.

(D) CONCERNING THE ALIMENTARY SYSTEM.

ART. 58.—*Posture as an Important Adjunct in the Treatment of Diarrhœa and Dysentery.*

By E. P. SALE, M.D., of Aberdeen, Mississippi.

(*American Journal of the Medical Sciences*, October, 1871.)

Rest, as is well known, is the *sine quâ non* in treatment of inflammations, and in order to secure it in the above intestinal diseases, Dr. Sale has for some time past directed patients to assume a *prone position* with a compress—*e.g.*, a pillow or bolster—placed under the abdomen, the amount of compression to be governed by the degree of tenderness. He conceives this method to approach in effect the splints, used to retain fixture of limbs. The compress to a great extent prevents peristaltic

action of the intestines, especially when used in connexion with opiates. The position renders respiration more thoracic, thereby preventing movement of the intestines, which is consequent on abdominal respiration, and tormina in a great degree is relieved.

Art. 59.—*Membranous Enteritis.*

By J. M. Da Costa, M.D., Philadelphia.

(*American Journal of the Medical Sciences.*)

Dr. Da Costa describes a complaint, under the name of *membranous enteritis*, with seven cases, which he believes is but very incompletely known, and scarcely recognised as a separate disease by the profession. The malady in its essential features consists of a painful and obstinate affection of the intestines in which membranes or skins are voided. It is not very common, yet it is not very uncommon; for there is scarcely a practitioner who, when his attention is directed to the subject, cannot recall one or more examples; and it is not unusual to meet with references to isolated instances in our periodical literature. Unless he is much mistaken, the ailment is the discharge of the inner coat of the bowels, of which Paulus Ægineta speaks; it is, he is more certain, included in the fanciful delineation of infarctus by Kaempf. Good speaks of it as diarrhœa tubularis; Todd describes it as follicular colonic dyspepsia; Sir James Simpson, as follicular enteritis; Cruveilhier and Laboulbène, as pseudo-membranous enteritis; Powell, impressed with its painful character, calls it "painful affection of the intestinal canal;" and very recently Whitehead has treated of the malady in his notes on mucous disease, besides other authors.

The disease is characterized by attacks of abdominal pain, followed by the discharge of what looks like skins or membranes, sometimes coming off in the shape of moulds or long tubes. There may be but one attack, but this is very exceptional; much more generally one paroxysm is followed after an interval of months by another, and yet another, and at times the disease may become almost continuous, with occasional distinct exacerbations. A week, in his experience, is the shortest time for an attack to last, and distension, sense of burning, colicky pains, and at times a sluggish state of the bowels, precede the discharge by days; after this has taken place, the abdominal soreness lessens, the feeling of rawness passes off, and the patient is well, though he is apt to have a coated, flabby tongue, to remain dyspeptic, and be readily fatigued. After a few seizures the patient may gradually recover, yet is never robust; or the disorder becomes persistent. He states that the treatment of the malady must be discussed from a two-fold point of view: 1st. The treatment most suitable during the attack; 2nd. To prevent recurrence, or, in protracted cases, to keep the membrane from constantly forming. The diet should be nourishing, but not excessive in quantity, for the patient's digestion is feeble. As a rule, he orders eggs, milk, bread, and solid food, which is better borne than liquids; tea, coffee, and alcoholic stimulants are only admissible in very small quantities. Great attention should always be paid to the action of the

skin, and baths, followed by systematic friction, are very useful. One of the most important points in the treatment of these cases is to prevent the patient from using purgatives. To prevent the formation of membrane, he has seen the best results from a steady course of iron, particularly of the perchloride. Cod-liver oil may aid in some cases, but it is generally not well borne. Acids sometimes appear beneficial. Injections have been highly recommended, and those of nitrate of silver especially. But, after all, their use is very limited, for the disease is not generally low enough down to be reached by them. Electricity he has has not as yet employed sufficiently to express a decided opinion about it. Cumming has published an enthusiastic account of its wonderful effects, especially when conjoined with the pitch pills. He recommends that the battery be employed for a quarter of an hour daily. In conclusion, he says, concerning the management of the vexatious disease, that the physician should always search for what may be possibly an exciting cause, and seek to remedy it.

Art. 60.—*Abscess of the Appendix Vermiformis.*

By Leonard Weber, M.D.

(*New York Medical Journal*, August, 1871.)

In a paper, containing several observed cases of this disease, Dr. Weber makes the following observations on its pathology. After remarking on the fact that there are numerous cases on record where foreign bodies in the appendix seem to have produced no symptoms or inconvenience during life, he states that fæcal concretions found in the cavity of the appendix, when dry, appear, on section, to consist of a central nucleus, with concentric laminæ around, which are all of the same composition—viz., phosphate and carbonate of magnesia and lime, &c. They look very much like fruit seeds, and have often been mistaken for them, although they consist mostly of nothing but the ingredients of the human fæces. To explain their origin, we must suppose that, by irregular contraction of the cæcum, a small portion of fæces is forced into the appendix, and then hardened to a concretion by gradual absorption of its fluid parts. The calculi, so formed, become a source of permanent irritation to the mucous lining of the appendix, inflammations gradually develop, and that portion of the mucous membrane particularly pressed upon by the calculus becomes thinner and thinner by ulceration. The muscular coat and peritoneal covering are at length perforated, circumscribed peritonitis takes place around, adhesions are formed with neighbouring parts, especially the cæcum and omentum. By-and-by the adhesions also undergo ulceration, and then perforation must occur at one or two points of the appendix, corresponding to the two ends of the calculus. Should the ulceration eat around the entire circumference of the process, as has been observed in a few cases, it may even cut off the appendix by gangrene, the calculus remaining fixed in its extremity, or dropping into the abdominal cavity, where it may be easily overlooked in the autopsy. Tubercular and more rarely cancerous ulceration, may

cause perforation of the appendix in a similar manner. The abscess resulting from perforation of the appendix may form and grow to the size of a man's first, and larger, walled in by the previously adherent neighbouring parts. Its contents may become solid, from the gradual absorption of the fluid parts, leading finally to a firm fibrous union of its walls, in which the calculus is imbedded, with the laminæ of the appendix wholly or partly obliterated; or ulceration may encroach upon the walls of the abscess, when perforation will take place either into the peritoneal cavity, rapidly followed by general peritonitis, or outward through the parietal muscles, or into the intestines, when pus is discharged per rectum. The proximity of the diseased appendix to the right iliac vein has been known to cause phlebitis. In a case recorded by Lewis, the coats of the vein were thickened and contracted below the appendix, and the vein filled by a thrombus in a state of decomposition; further up, above the process, it was filled with fresh coagula. The patient's right leg became œdematous, as in phlegmasia dolens. In a case observed by Heunoch, fatal hæmorrhage into the peritoneal cavity took place. When the abscess makes its way into the parietes, fistulæ may result. Pleurisy, pneumonia, pneumothorax, and pericarditis have resulted from the abscess penetrating the diaphragm. When, upon the presence of a foreign body in the appendix, inflammation and gangrene do not supervene; the mucous membrane, distended and thinned by accumulation of its own secretion, is gradually converted into a serous membrane, secreting a thin albuminous fluid, the appendix itself forming an hydropic sac. Foreign bodies, as orange-pips, cherry-stones, &c., finding their way into the appendix, may produce similar pathological changes to fæcal concretions; but the latter are the cause of ulceration in the vast majority of cases.

Art. 61.—*A Contribution to the Clinical History of Rare Forms of Intestinal Obstruction.*

By Dr. Ernst Gussmann, of Stuttgart.

(*Wurtemb. Correspondenzblatt*, xli. 7, 1871; *Schmidt's Jahrbücher*, No. 11, 1871.)

Frau B——, aged twenty-nine years, presented, on January 21, 1871, the symptoms of an ordinary attack of gastric catarrh; she had felt unwell for some days previously, although she had not been confined to her bed. On examination, Dr. Gussmann found that the patient was affected with marked insufficiency of the mitral valve, the cause of which had very probably been a severe attack of acute rheumatism, occurring two years previously. Dr. Gussmann prescribed bicarbonate of soda, and liq. ammoniæ acetatis, with decoction of rhubarb, and gave instructions about a corresponding diet. This treatment afforded considerable relief, the patient's appetite was restored, and three profuse motions were passed. On the 23rd of January the patient felt so well that she took a walk, and on that day Dr. Gussmann discontinued his visits. On the following morning, however, he was again called in, as the patient during the night had been attacked by frequent vomiting and pains in the abdomen, and felt herself much exhausted; her tongue was thickly coated, and the abdominal muscles were hard, although

there was no pain on pressure ; there was a clear percussion sound over the whole abdomen, except just above the pubic symphysis, for about three inches, where there was dulness and also some tenderness. No difficulty in micturition ; menstruation had occurred regularly about three weeks previously. The patient denied having committed any indiscretion in diet. Dr. Gussmann concluded that there was some periuterine inflammatory process, and decided if the symptoms should continue, to make a local examination. The vomiting then ceased for a few hours, after the administration of morphia and the local use of ice, but afterwards returned with renewed severity ; on the 26th there was evident ileus. The vomit contained some round worms, and several hard chalk-like small masses. The bowels had not been relieved since the 23rd, and for some days past there had been difficulty in micturition. The abdomen had increased perceptibly in size, and its walls were stretched ; there was, however, throughout the course of the affection, no pain on pressure. A close examination into the existence of any hernia was attended with a negative result. The above-mentioned area of dulness over the symphysis extended upwards for a distance of three fingers' breadth. A vaginal examination made on January 26th revealed an elongated and conical vaginal portion pressed against the symphysis. This was not painful when touched. The uterus was moveable and both vaginal cul-de-sacs were quite empty.

This local condition was opposed to the idea of a periuterine inflammatory process ; on the other hand, the long-continued arrest of stools, the frequent and uncontrollable vomiting, the presence in the rejected matter of fæcal masses, the increasing distension of the intestine, and the collapsed appearance and the great agitation of the patient, indicated *intestinal obstruction*. Dr. Gussmann regarded the hardened fæcal masses as probable causes of the obstruction, and against these directed his treatment.

The vomiting was combated by champagne and ice, occasional cold compresses, and by narcotics, and the constipation by frequent and abundant glysters and occasional doses of castor- with croton-oil, which latter, strange to say, were seldom returned by vomiting. The annoyance caused by the continuously increasing distension of the abdomen, the restlessness, and the loss of sleep were treated by hypodermic injections of morphia, frequently repeated during the day. On the 27th there was a painful and slight stool, composed chiefly of fœtid, hard, chalk-like masses ; this, however, gave but little relief. From this period the state of the patient became very unfavourable. The intestine became more and more tympanitic, and, by forcing the diaphragm upwards, interfered with respiration. Fluctuation, abdominal dulness, and severe pain, whether spontaneous or on pressure, were never present ; peritonitis, therefore, was excluded. The vomiting continued, although it was not so severe ; fæcal material was no longer ejected, but only a thin acid, slightly fœtid, and somewhat viscid fluid, derived from liquid nutriment which had not passed beyond the stomach. The skin was hot, the tongue red and dry, and the pulse small and frequent. On January 29th, the patient was placed in a warm bath, and a long tube introduced into the large intestine, through which, with some difficulty, a considerable quantity of solution of salt was passed. Subsequently there was intense collapse and excessive meteorismus, and on the evening of the 30th the patient died.

The post-mortem examination, made thirty-seven hours after death, revealed the following :—

The abdomen very much enlarged and distended, hepatic dulness quite

absent; the peritoneal sac contained about two ounces of serous fluid, but no gas; the small intestine was distended to the utmost by gas, and its coats strongly marked by capillary injection, and somewhat cloudy; the liver was of normal size, was covered by tympanitic small intestine, and forced backwards: on section the organ was found to be congested with dark blood, and its tissue had commenced to undergo fatty degeneration; the gall bladder was much distended; the spleen was small and wrinkled; the stomach contained very little fluid, but was much distended by gas; the small intestine could be ruptured on firm digital compression, and then gave exit to quantities of yellow fæcal fluid, without much smell; the whole of the large intestine was much contracted and quite empty, and the mucous membrane both of the large and small intestine was unaltered; the omentum had been changed into a cord of the thickness of the little finger, which was tightly stretched from the middle of the transverse colon to the pelvic cavity, where it was found to be very closely adherent to the right ovary, which was enlarged; this tough omental ligature was completely buried in the coils of small intestine: the right ovary was surrounded by tolerably fresh and dark red masses of connective tissue, the product of previous inflammation, and contained an abscess of the size of a walnut; the right Fallopian tube was adherent to the corresponding ovary, and was thickened, tortuous, and imperforate.

(E) CONCERNING THE GENITO-URINARY SYSTEM.

ART. 62.—*On the Treatment of Diabetes by Lactic Acid (Cantani's Method).*

By GEORGE W. BALFOUR, M.D.

(*Edinburgh Medical Journal*, December, 1871.)

The pathology of diabetes, although still obscure, is now pretty generally admitted to consist in some perversion of the glycogenic function in the body, and the treatment has hitherto been mainly directed to the object of depriving the organism of the pabulum from which the glucose is mainly derived, and such remedies are employed as may alter the nervous energy of the organs at fault. Cantani, however, considers that in diabetes there is not merely an increased production of sugar, but an imperfect combustion of that principle, and he believes that this imperfect combustion depends on the production of a morbid form of glucose which he calls *paraglucose*, a substance incapable of being transformed into lactic acid, and which therefore cannot be burned, and consequently passes unchanged into the urine. As the sugar and starch of the food cannot now be burned, the heat of the body is maintained at the expense of the albumen and fats, the combustion of the former tending to excess of urea, which adds to the density of the urine in diabetes. The albumen and fats received as food being now insufficient for the requirements of the body, the tissues are employed also for that purpose, and hence the rapid emaciation in the disease. In the early stage of diabetes the quantity of sugar in the urine varies with the diet, but in the latter stages Cantani believes that the inosite of the muscles, and even the gelatinous tissues are converted into paraglucose. He considers the liver to be the chief seat of disease, but whether this be the case or not, he proposes to give as complete rest as possible to

this organ by withdrawing sugar-producing substances, and subjecting the patient to a rigorous meat diet. But, as this is only a temporary expedient, inasmuch as meat itself may ultimately be converted into paraglucose, he further proposes to prevent waste by supplying a combustible agent in a quantity sufficient for the wants of the body, so that the albuminates and fats may be spared. Now, in the conversion of glucose into carbonic acid, lactic acid appears to be the intermediate product, and lactic acid is the combustible agent which Cantani recommends. The quantitity of lactic acid administered by this physician is from 77 to 154 grains daily, diluted in from eight to ten ounces of water, and his meat diet is exclusively one of plain meat, roast or boiled, without any sauces of milk or eggs, and without any bread, flour, or any vegetable matter whatever, the only seasoning permitted being salt, oil, and a little vinegar. The drink allowed is water, either plain or with a little of the purest alcohol; coffee, tea, and wine being prohibited. The results are said to be surprisingly successful, and Dr. Balfour remarks that the latest treatment adopted in Great Britain—viz., that by skim-milk, bears out Cantani's views so far as it is a strictly animal diet, free from amylaceous matter, and containing three to six per cent. of lactin, which, under the influence of caseous matter, become transformed into lactic acid. Dr. Balfour has tried both these systems, but he finds that of Cantani the more successful. He relates the details of seven cases, in most of which the treatment was attended with favourable results, and he invites a further trial of Cantani's plan at the hands of the profession. The lactic acid employed by Dr. Balfour is fluid, not syrupy, of the sp. gr. 1·027, and with the ordinary musty smell of sour milk, and three to four drachms a day appear to him sufficient for all practical purposes. Koumiss would probably be a useful article of diet for diabetic patients.

(F) CONCERNING THE CUTANEOUS SYSTEM.

ART. 63.—*Lectures on Dermatology.**

By ERASMUS WILSON, F.R.S., F.R.C.S., Professor of Dermatology at the Royal College of Surgeons.

(*The Lancet*, February 10, 24, March 2, 16, April 6.)

LECTURE I.

Professor Wilson commenced his first lecture with a brief glance at the system of classification which he has adopted, and a summary of the ground over which he passed in the two previous courses. In the last of these he considered eczema and its allies, and he proposed this year to resume the study of the common inflammations of the skin, and then to describe the specific forms. Before passing to the consideration of the next division of common inflammations, the erythematous group, he showed and described some new models illustrative of eczematous affections, which had been added to the collection since last year's

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* Delivered at the Royal College of Surgeons, February, 1872.

lectures, most of them by M. Baretta, of Paris. Two of these were examples of chronic eczema of the hand, with so much dried secretion that in Paris there had been much difference of opinion as to their real nature; one having been called by Bazin "eczéma corné," and by Hardy "psoriasis scarlatiniforme;" the other, by Bazin "ichthyosis," and by Hardy, "lichen." A third new model was of a beautiful specimen of lichen planus, an affection differing from eczema only in the absence of desquamation, there being one lesion of the skin instead of two. In the centre of each of the flat papillæ is the opening of a follicle, and this character determines the lichenous nature of the affection. The term lichen has of late been modified in its application. Originally a dermatological term, meaning a circular blotch of eruption, looking as if stuck on, it was borrowed by the naturalists to describe the peculiar cutaneous growth upon trees. By Willan, and at the present day, the term is used to distinguish pimples, but is restricted by some, as the lecturer, to those that are due to inflammation of the follicles.

The essential characteristic of the eczematous family is a complication of appearances, a mingling together of several lesions of the skin, redness, papules, vesicles, pustules, exudation leading to moistness, or to desquamation, or perhaps to swelling. According to the predominant lesion the variety of eczema is designated. Its correct appreciation aids the diagnosis of other cutaneous affections whose lesions are less complex, as erythema, pemphigus, and furunculus.

The essential characteristic of erythema is a hyperæmic redness; it is a pathological blush, and it is as evanescent as its normal prototype. Its origin is the same, the operation of the vaso-motor nerves, determined by some external or internal cause which must be sought out and removed. Erythema eczema are both hyperæmic conditions, but in the latter there is breach of continuity, in the former there is not, though there may be desquamation, and even, in erysipelas, vesication. The affections of this group are erythema, erysipelas, and urticaria. They are characterized by redness, more or less swelling, more or less itching, and more or less mobility. The amount of exudation is the main distinction between erythema and erysipelas, while in urticaria there are transient white elevations, probably due to spasm of the cutaneous muscular fibres. The fugitive and migratory characters of the erythematous group indicate their neurotic origin. Erythema fugax is frequently caused by emotion, and very commonly occurs as a reflex phenomenon from stimulation of the gastric plexus of the pneumogastric nerve. The tumescence which is a frequent accompaniment of these affections is due to exudation from the capillaries. It is usually quickly absorbed, but in one form of erysipelas finds its way to the surface. It may contain some colouring matter from the blood which produces the varied hues of the fading areas. The Professor next pointed out and described the specimens of erythema and urticaria in the College collection of models. That of erythema nodosum was especially interesting, from the position of the eruption in rings around the legs, instead of, as usual, in oval areas parallel to its axis. He drew especial attention to the circumferential growth of some forms, well illustrated by the specimens exhibited, the isolated circles of circinatum, the coalescing circles of gyratum, the fragments of circles of marginatum.

This centrifugal development obeys, he said, the same law as the circular waves which sweep over the surface of a pool into which a stone has been thrown. In erythema iris the appearance of the central boss has suggested a resemblance to the iris of the eye, but it probably differs from E. papulosum only in form, and constitutes an interesting link to more decided examples of eccentric annulation to be afterwards considered. Gastric disturbance lies at the root of all these varieties; its cause would seem to be of no importance. Usually some article of food is the source of irritation, but of allied nature are the cutaneous eruptions which follow the use of certain medicines, as belladonna, arsenic, and balsam of copaiba. The papular folliculitis produced by iodide of potassium is probably eliminative in character, but like the others, is essentially an irritation or over-stimulation of the cutaneous tissues. With this action is no doubt connected the therapeutical influence of arsenic as a cutaneous tonic in many chronic affections, and of the iodide in cutaneous syphilis. Analogy and the accidental cure of a case of lepra suggested the possible utility of copaiba, and Hardy has recommended it in that affection, but in the hands of the lecturer its success has not been great. A beautiful model of erythema copaibieum, by Baretta, was exhibited.

LECTURE II.

After glancing at two remaining forms of erythema, the lecturer spoke of erysipelas. It is, he said, an erythema with all characters aggravated in intensity, both local and constitutional. The latter, however severe, usually quickly vanish on treatment which has been justly regarded as specific—twenty minims of tincture of perchloride of iron every two hours, preceded, of course, by an aperient and regulation of the functions of digestion and assimilation. Many cases are presumed to be erysipelas which are really nothing of the kind. Herpes frontalis and eczematous inflammation of the eyelids are especially so mistaken.

Urticaria, although semi-neurotic, is more allied to the erythemata than it is to the pure neuropathic affections, prurigo and pruritus. Its name is founded on its neuro-sensitive qualities; the accompanying hyperæmia indicates its neuro-motor nature. The bosses and wheals are probably due to muscular spasm. The College models of urticaria were then described. Its special symptoms vary much in degree. Usually due to irritating food, it quickly disappears on the removal of its cause; but in one form, U. persistans, the affection is persistent. Occasionally the centre of a boss subsides, forming a yellowish area surrounded by a circular wall; next a part of this wall disappears and the rest increases by serpiginous growth, forming an arc on the convex border, of which alone the redness is to be seen. Finally both subside, leaving sometimes a pearly stain, sometimes slight pigmentation, sometimes no trace whatever.

Comparing the eczemata and erythemata from a therapeutical point of view, it is seen that in the former the local affection demands more attention than in the latter. In the eczemata we have primarily to treat debility; in the erythemata, first to attend to the alimentary canal and then prescribe tonics. To this erysipelas might seem to present an exception, but the difference is more apparent than real, being mainly

one of time. In chronic urticaria with neurotic phenomena small doses of arsenic may be found most useful. Absorbent powders are the chief local remedies for the erythemata. The itching of urticaria may require also sponging with hot water, the warm bath, and a lotion of emulsion of bitter almonds with borax, spirits of wine, and hydrocyanic acid.

The phlyctenous affections are represented at the College by models of pemphigus and herpes. In these the pathological state is trimorphic, the lesions of the skin being erythema, vesicle or bulla, and crust. It is strange that in some cases erythema subsides without leaving any mark of its presence, while in others it is followed by exfoliation of the cuticle, and in others by serous effusion beneath the epidermis, and even by suppuration and ulceration. The readiest explanation is that the difference is one of vital dynamics, of degrees of vital and nerve force. Pemphigus iris offers an instance of the transition from the erythemata. It resembles in general character erythema iris, with the addition of vesication. The central bulla may be surrounded by one or several vesicated rings. It is usually local, limited to the hands and feet, and associated with debility and with enteric disturbance.

In one case, of which a drawing was shown, the central bulla was surrounded by seven red rings, separated by paler circles; and round another spot in the same case were nine circles of different tints. The affection is often miscalled herpes iris. One of the specimens exhibited had been named by the French hydroa, from its bullous centre.

Pemphigus vulgaris is usually local, but occasionally, in cachexia and in severe cases, it is general. A model was exhibited from a servant girl who had died on the ninth day from the outset of an attack. The eruption was general, but most abundant on the extremities, the average size of the bullæ being that of an almond. It had occurred after the use of an ointment containing turpentine, which she had employed for a pruritus. At first there was little evidence of any general mal-nutrition, but she became delirious, and afterwards comatose. At the post-mortem examination the only morbid appearance was congestion of the mucous membrane of the small intestine. Pemphigus is always a grave disease, the occurrence of the blebs indicating a low vitality. The fluid contained in them is at first clear blood-serum, but it afterwards becomes opalescent and yellow from the development of pus-globules. Occasionally it is coloured by blood, either from accidental friction or hæmatolysis, which betokens more or less advanced cachexia. Usually the retrogression of the bleb is simple, with or without the exudation of inflammatory products; but sometimes superficial gangrene occurs, and is succeeded by ulceration.

In conclusion, the lecturer glanced at the misapplication of certain dermatological terms, especially "lichen" and "herpes." The former, he said, which comes from λείχειν—*lingere*, to lick—refers to something adhering to the surface, as the tongue to a glass plate which it is licking. It is correctly used by botanists, but there is nothing more opposed to the genius of the word than the group of pimples to which it is applied by the dermatologist. Again, herpes is derived from ἕρπειν—*serpere*—a word which has given us the adjective "serpiginous." Its character of creeping onwards by the circumference to the neighbouring skin is one which the eruption of herpes entirely lacks.

LECTURE III.

Continuing his description of phlyctenous affections, the Professor first considered herpes. After alluding to its frequency, so much greater than statistics would suggest, and describing the characters of the eruption, he said that it is a good instance of the identity of disease in ancient and modern times, always having received the same names and awakened the same prejudices. We find expressed by Pliny the popular dread of the present day, that death will occur if the herpetic circle is completed. The groups of the vesicles correspond to branches of the cutaneous nerves. The slighter forms of herpes—as on the lip—are familiar to all; on the trunk the course is similar—puncta soon becoming vesicles, with contents at first clear, soon opaque, then yellowish, drying into a scab, which, falling, leaves a white cicatrix for the rest of life. From pemphigus it differs in its local distribution, the absence of any relation to cachexia, and its brief definite course. No part of the skin is free from the occurrence of herpes. The pain may be merely that of the local inflammation of the skin, or neuralgia may precede or follow it, and the neuralgia may be prolonged, and last for months or years. Herpes may follow the course of large nerve-trunks, or as in H. labialis, that of the peripheral cutaneous twigs. It occurs more frequently along the intercostals than in the region supplied by the rest of the nerves; and it is more common on the left side, perhaps from communication between the affected nerves and the organic plexuses distributed to the stomach and digestive organs, and the morbid influence resulting from such intercommunication. The exciting cause is generally cold. As an affection of large nerve-branches it rarely occurs more than once in a lifetime. Connected with smaller nerve-twigs, in H. labialis and H. preputialis recurrence is the rule. Although it may never have been known to encircle completely the trunk at one particular zone, cases are on record where it has been simultaneous on both sides of the body, but in different regions. Although usually observed in a single region, and affecting only one or few nerves, Mr. Wilson has met with one case in which there were five separate tracts, each around a hemicircle of the trunk, between the collar-bone and the groin.

The treatment of herpes and pemphigus must correspond to the difference in their origin. Constitutional remedies, so essential in the latter, are, in the former, mere adjuvants to the local management, the chief point being the correction of any visceral disturbances with which it may be "sympathetic." Locally, in each, the dredging-box and desiccant powders are needed, and, perhaps, oxide of zinc ointment rendered more cooling and gently stimulating by the addition of a little spirits of wine. The subsequent neuralgia may require strong sedatives; perhaps, when practicable, division of nerve trunks. In ulcerative herpes and cachectic pemphigus, local tonics may be necessary, powder of cinchona bark, carbolic acid in ointment, or a lotion of chloride of zinc, which give tone and counteract the tendency to decomposition and gangrene. For H. zoster a lotion of lime-water and oxide of zinc answers best. H. labialis and preputialis may sometimes be checked at an early stage by painting with tincture of iodine.

The furunculous affections, ecthyma, hordeolum, furunculous anthrax, constitute the fourth group. Their special morbid characters are a degree of isolation, referable to the follicular origin of the disease, the deeper implication of the skin in the inflammatory and pyogenetic processes, and the tendency to gangrene and ulceration. The old dermatologists distinguished between psydracious pustules on the surface, mere vesicles with purulent contents derived from the rete mucosum, having no scar, and phlyzacious pustules, more deeply seated in the corium, originating in a follicle, deriving pus from the connective and other tissues of the substance of the skin, and leaving a cicatrix. The furunculous affections are of the latter form. Their treatment is that of a surgical affection of the skin, modified less by the peculiarities of the disease than the constitution or habits of the patient. Digestion, &c., must be put right, because a part will more rapidly recover its health with a healthy whole than with an unsound whole. Locally, some forms need merely palliation, others stimulation. In the early stage of a boil slight counter-irritation may occasionally arrest its progress. During the suppurative stage poultices may be necessary, and afterwards stimulating ointments, especially resin ointment.

The last group of common inflammations of the skin consists of the traumatic affections. Only four of these are represented in the College collection. One is the ulceration produced by the local contact of arsenical solutions—deep ulcers, coated on the surface by buff-coloured lymph, bordered by a red margin, and surrounded by a purplish-red, thickened, and desquamating areola. The aniline dyes have also the property of exciting an inflammation of the skin having the characters of aggravated eczema, attended by considerable effusion beneath the epidermis. The progress is slow, and the dermatitis apt to recur at intervals of a few weeks for a considerable time. The last model exhibited was one of a peculiar eruption on the metacarpus of the thumb, whence a line of inflamed tubercles extended upwards to the axilla, the intervening spaces being pale-red. Unfortunately the model had no history attached to it, but the tubercles probably consisted of a glandular adenoid tissue developed from the lymphatics.

LECTURE IV.

In his fourth lecture Mr. Wilson commenced the consideration of the specific inflammation of the skin. He briefly described those exanthematous eruptions which are represented in the College collection: rubeola, scarlatina, and variola, and then passed on to consider some of the forms of syphilitic eruptions. Dermato-syphilis, he said, feels its way gradually in the integument. At first it is an erythema, then, by a process of growth, a papule is produced, of various breadth, and subsequently pustules or ulcers may occur. Thus three natural classes are formed, to which a fourth, the degenerative form, may be added. Erythematous syphilis may be general or local; as the accompaniment of the fever it is usually general—a corymbose exanthem like measles or in round spots and maculæ. It may be easily mistaken for rubeola or roseola, and hence it is inexpedient to call it syphilitic roseola, as is often done; dermato-syphilis erythematosa is a better term. Syphilis is essentially a disease of weakened nutrition; the blood-corpuscles seem

to undergo decomposition, and the colouring principle to become diffused. Hence the altered pigmentation, the muddy tint of skin, and the copper or rather reddish-yellow brown colour of the fading rash. Erythema is also the form of syphilis most common in the palm of the hand, characterized by redness, desquamation, and fissures. It resembles eczema, but usually one hand only is affected: there is no exudation; there is a tendency to recovery in the centre and growth from the border, and there is an absence of pruritus, an important diagnostic feature in syphilitic eruptions, which seldom proves delusive. The rash that accompanies a recurrence, after some weeks, of the syphilitic fever is usually attended with prominence of the congested follicles, producing the eruption of papular syphilis. The first impetus of the fever results only in dilatation of the capillaries; the second is accompanied also by transudation and increased bulk of the intervascular structures. The mechanism of the production of the papule and its growth is simply a continuation of the same process. Some papulæ go on enlarging till they form elevations more than an inch in diameter, and are called tubercles. Their pathological constitution is the same; the latter, however, indicating a more chronic stage of the disease. Desquamation occurs in both papular and erythematous syphilis. In both forms the mode of development and growth is the same—extension by the circumference, subsidence in the centre, until rings are formed. This is most characteristic in the erythema. In the papular form we sometimes find clusters, or blotches, without regular form, but they sometimes assume the shape of rings, or are distinctly annular in distribution. Further, the pustules and ulcers pursue the same mode of development and growth, often occurring in patches, which ulcerate first in the centre and subsequently extend by the circumference, forming annular or serpiginous ulcers of considerable extent.

LECTURE V.

The chief part of Mr. Wilson's fifth lecture was occupied by a description of the various models of syphilitic eruptions contained in the College collection. Incidentally he drew special attention to the varieties in extension and distribution of the morbid change, particularly as exemplified in the papular form. This usually manifests itself in concatenated rings of papulæ, or discoidal elevations, and the transition between the two is obvious. In each it is common to find the central prominence still remaining, and surrounded at a short interval by a circinate ring. The tubercular rash which commonly extends itself in this way has received improperly the name of "syphilitic lepra." The true way to regard it is as one of the physiological modes of manifestation of the pathology of the skin, for it is easy to show its physiological connexion with the scattered form of papular eruption.

In successive attacks of syphilis the disease would seem to acquire an increased impetus, or possibly, with greater likelihood, the tissues lose their capability of resistance, and hence the increased intensity of its successive manifestations. There is an indication of a similar notion of succession in the use of the terms secondary and tertiary; but these divisions are arbitrary and vague, and the four classes of skin eruption, erythematous, papulous, ulcerative, and degenerative, afford a much

better basis for the classification of the periods of the disease. Mr. Wilson has seen no form of syphilitic eruption that could be called vesicular, apparent instances being really either papulæ vesicating on the summit, or papular tubercles suppurating on the summit, and indicating a commencement of the ulcerative period of the disease.

Passing to the ulcerative forms, Mr. Wilson described the characters of rupia—an ulcer with much secretion and desiccation of that secretion into crusts, and the usual centrifugal extension of the morbid process beneath the crust. A common seat of the ulcerative process is the wall of the matrix of the nail, commonly the posterior wall, sometimes the whole matrix, leading to great swelling of the finger-ends. The cachexia of syphilis is very decided. It destroys the corpuscles of the blood, probably converting their colouring matter into pigment; it induces emaciation, and gradually exhausts the constitutional powers.

The migratory or serpiginous character of some syphilitic eruptions is very marked. It is not peculiar to syphilis, but was seen in some of the groups of cutaneous affections before examined, being apparently due to a law of cutaneous disease, which syphilitic affections obey with the rest. The Professor, in conclusion, drew attention to and described the models illustrating this character, and also some representations of certain more chronic forms of the papular group.

LECTURE VI.

Professor Wilson, in his sixth lecture, first passed in review the regular course of syphilis. It obeys, he said, the same laws as the other animal poisons, and becomes milder the longer it remains in the body, and is also rendered milder by transmission from individual to individual. The ordinary varieties in the disease may all be explained by the influence of individual constitution. The disease known in Norway by the name of "radesyge" or "bad disorder," of which a terrible outbreak occurred a century and a half ago, is really a form of syphilis. A plaster cast was shown of a late syphilitic eruption, a pitted and ulcerated surface, the ulcers with ragged edges, and here and there of pathognomonic horse-shoe form, which Dr. Boeck, of Christiania, had pronounced a characteristic example of radesyge.

After showing some models of syphilitic affections of the tongue, Mr. Wilson went on to speak of degenerative syphilis. In this a process goes on of a nature essentially the same as that which results in ulceration, though slower; the syphilitic tubercle leaves a scar just as does an ulcer, although there may have been no breach of surface. In the morbid change the affected part becomes swollen, and constitutes a tumour of greater or less dimensions, a "syphiloma" or "gumma." No organ of the body is safe from invasion; even the heart may suffer. The hairs may undergo a change, which consists essentially in an arrest of development of the hair at its cellular stage; in the portion so arrested there is a copious deposit of pigment.

The successful treatment of syphilis may be resolved into the two processes of elimination and restoration. A method once in great favour consisted in milk diet and clinical decubitus; another, still in vogue in Germany, is a combination of sweating, purging, and starving.

One of the most successful cures Mr. Wilson has ever seen was effected in the course of a few weeks chiefly by infusion of elder-flowers, with jalap and low diet. But the two chief remedies must always be mercury and iodine, the former at the beginning and end of syphilis, the latter chiefly in the secondary stage. In infantile syphilis Mr. Wilson prefers to give the child perchloride of mercury, one-thirtieth of a grain three times a day, unless the mother shows evidence of affection, when the treatment may be through her. In secondary eruptions a mild mercurial may supplement the iodide. In giving the latter it is important to remember that it acts best when largely diluted; five grains should be dissolved in at least half a pint or, if practicable, in a pint of some bland fluid.

In conclusion, Mr. Wilson said that he could not take his leave without being reminded that that day was the anniversary of their great and distinguished master, John Hunter, to whose comprehensive mind every work of the Creator was interesting and important, in whose sight nothing was too small for observation, and nothing created in vain. In all departments of the field of pathology his zeal and faith were equally energetic and pure, whether investigating what may be termed the physiology of pathology, as in his grand labours on the blood, inflammation, and syphilis, or morbid changes in the integument. He had left behind him in the splendid museum, which would for ever be a chaplet to his fame, many valuable specimens of dermatological interest; and if his spirit were round them that day, they might hope that he would not look disapprovingly on their present occupation. No whole to him seemed perfect without the perfection of its parts, for the soul of Hunter was all-absorbing and universal.

Art. 64.—*On the Use of Phosphorus in Certain Diseases of the Skin.*

By H. Eames, M.D.

(*Dublin Journal of Medical Science*, January.)

It appears that Dr. Burgess was the first physician who recommended the use of phosphorus in certain skin diseases, but Dr. Broadbent has recently given the same metalloid with good effect in some cases, and Dr. Tilbury Fox has also recommended its use; but Dr. Eames considers that phosphorus is much more than a substitute for arsenic, as some previous writers have regarded it, and he alleges that it has been used with marked success in certain cases in which arsenic has failed. The mode of administration adopted by him was a solution of the phosphorus in oil, and the dose of the solution was from five to ten minims three times a day after meals. Dr. Eames relates the particulars of several cases which were thus treated, and in all the results were successful. One was an instance of acne indurata of a most severe character, which had resisted all other local and general treatment; three of the cases were instances of lupus; and two of scrofula-derma. In psoriasis Dr. Eames found phosphorus very efficacious, even when arsenic had proved unserviceable and he gives three cases in proof of

this statement. A case of pemphigus was also cured by the use of phosphorus. Dr. Eames found that the drug produced a coated state of the tongue, and sometimes symptoms of dyspepsia, loss of appetite, mental depression, and bodily weakness; but, when these symptoms appeared, the phosphorus was discontinued for a time, and mineral acids substituted. Most of the cases recorded by Dr. Eames had been treated by arsenic and other drugs before they came under his care, and he regards phosphorus as far superior in efficacy to that and other vaunted specifics in skin diseases.

Art. 65.—*On the Treatment of the Itch in Children.*

By A. Monti, M.D.

(*Centralblatt f. d. Med. Wiss.*, April, 1871.)

Upon the suggestion of Froehlich, the above author instituted some experiments upon the action of copaiba-balsam on the itch of children. He in the first place verified the fact that the freshly-captured itch-insect dies in from two to three hours when placed in copaiba-balsam. The balsam produces on the skin an active redness and burning, which disappear after half an hour, and with them also the troublesome itching. After three or four inunctions, spread over one or two days, the efflorescence of the skin grows pale. No disturbance of the digestion nor of the urinary organs was noticed in any of the cases. The duration of the treatment varies between two and twelve days. The scabies nodosa, without eczema, is the most readily healed—the balsam has no influence upon eczema or upon pustules. The balsam of copaiba is cheaper than that of Peru, is to be preferred on account of its more agreeable odour, and does not stain the linen.

Monti experimented with carbolic acid, employed either in solution (one to two drachms to one pound of water) or in the form of salve, ʒj to ʒiv unguent. simpl. After a preliminary washing, the carbolic acid is vigorously rubbed into the diseased parts of the skin. In scabies pustularis, poultices are used instead of the initiatory washing or baths. The redness and burning of the skin caused by the carbolic acid soon disappear. Any eczema present is speedily cured. The duration of the treatment is very short; as a rule, six to nine inunctions, in the space of two to four days, suffice; if eczema is present the treatment is somewhat protracted. This method is much to be recommended for children.

Art. 66.—*Sulphate of Iron in Erysipelas.*

(*British Medical Journal*, Dec. 16, 1871.)

Mr. Hulke, at the Middlesex Hospital, has lately tested the great efficacy of iron sulphate in extensive erysipelas. He uses it as a lotion of ten grains to an ounce of water, applied warm on a rag; and believes it acts as a local styptic, astringent, and sedative, as well as a constitutional tonic. In circumscribed erysipelas on small surfaces, he applies

the ordinary coating of collodion and castor-oil. He deprecates the application of flour to any part, as a source of dirt, blebs, and maggots. So many cases of erysipelas have lately occurred in and around the hospital, that he thinks it must be caused, in wounded and weak patients, by a deleterious atmospheric influence. What the nature of this influence is, he is unable to say.

Art. 67.—*Abortive Treatment of Erysipelas with Silicate of Potash.*

By Dr. Piazza.

(*L'Imparziale*, December 16, 1871.)

Dr. Piazza recommends as a local means of effecting the cure of erysipelas, the application of a somewhat concentrated solution of silicate of potash, which should be painted on the part affected in two or three successive layers. Dr. Piazza states that the use of silicate of potash has become quite a common practice in his hospital with excellent results, without having recourse to any general or internal treatment. Dr. Figgioli has obtained equally good results by the same means.

Art. 68.—*Effects of Crude Paraffine on the Skin.*

By Alexander Ogston, M.D.

(*Edinburgh Medical Journal*, December, 1871.)

An affection of the hair-follicles is described by Dr. Ogston, which is caused by prolonged exposure of the skin to the action of the oily matter contained in this substance: the result being an eruption of nodules and pimples on the skin so exposed, speedily breaking out on those who are for the first time engaged in handling it, lasting for a few weeks or months, and then generally diminishing or disappearing. In the few cases in which it becomes chronic a change of employment is a necessity. The mark of difference between the acute and chronic forms is the presence of inflammatory action in the former. A minute examination of the skin in the former variety shows bright-red nodules which are hard to the touch, tender on pressure, varying little in size, which is about equal to that of a grain of barley, are of a rounded form, and consist each of a single hair-follicle with the surrounding parts red and inflamed. A hair emerges from the summit of one of these follicles, the orifice of which is enlarged to the size of a pinhole in a card. This dilatation extends to the deeper part of the follicle, which is filled with a dry and friable mass of epithelial scales and dirt. In the chronic form the hairs have been atrophied and destroyed by pressure, and the skin affected presents the open mouths of these distended follicles, sometimes large enough to admit the end of a probe, the skin including those raised patches of eruption being of natural colour.

The *modus operandi* of the crude paraffine in producing this eruption seems to be that the oily matter in the shale called "blae oil," is irritating to the skin; and, coming continually in contact with the epidermis, soaks into the hair-follicles, where it causes an increased growth of epithelium, which is not counterbalanced by increased expulsion of the scales, owing to the fatty matter from the sebaceous glands being dissolved out and removed by the "blae oil," thus leaving the brittle mass of epithelium to plug up the follicles. Parts of the skin not supplied with hair-follicles are not affected.

Art. 69.—*On Herpes Zoster Ophthalmicus.*

By M. Joseph Kocks.

(*Inaugural Dissertation. Bonn*, 1871; *Schmidt's Jahrbücher*, No. 11, 1871.)

The author has collected and statistically arranged reports of eighty cases of this affection. The sex is given in seventy-four of these cases, of which the subjects in forty-seven cases were males, and in twenty-seven females; the ages of seventy-one patients were as follows:—between one and ten years, five cases; between ten and twenty years, ten cases; between twenty and thirty years, eleven cases; between thirty and forty years, five cases; between forty and fifty years, ten cases; between fifty and sixty years, eleven cases; between sixty and seventy years, fourteen cases; between seventy and eighty years, four cases; and between eighty and ninety years, one case. In the great majority of cases the previous condition of the patient as to health was stated to have been good. In thirty-one cases the affection was preceded by certain neuroses, especially neuralgia, and on one occasion by irritation of the eye. With regard to the side of the face on which the herpes was found, it was stated to have occurred on the left side in forty, and on the right side in twenty-eight out of sixty-nine cases, and in remaining case on both sides. In many cases reliable reports are wanting with regard to the nerve-twigs involved; no mention is made of the frontal nerve, from which the affection has its name. The nasal nerve was affected in twenty-three out of thirty cases. An accompanying affection was observed in forty-six cases, in thirty-four cases it was absent. In twenty cases the cornea alone was affected, in fifteen cases the conjunctiva, and in fourteen cases the iris was the structure affected, in ten of which cases the cornea also was involved. It is shown in seven cases that the ocular affection is not necessarily connected with the extension of the disease along the course of the nasal nerve, as it may occur without the latter phenomenon, or, again, the latter phenomenon may be present and the orbit yet remain unaffected. The most frequent of the persistent sequelæ were corneal cicatrices (in one-half of the cases) and corneal opacities. In some few cases the neuralgic pains remained. Loss of the eye is a very rare result.

Art. 70.—*Herpes Impetiginiformis.*

Under the care of Professor Hebra, at the General Hospital, Vienna.

(*The Lancet*, March 23.)

The following account of a rare form of skin disease occurring during the course of pregnancy will be read with interest.

At the beginning of last June a woman, twenty-five years old, and in the ninth month of pregnancy, was admitted into Professor Hebra's small-pox ward, under the supposition that she was suffering from varioloid. She had been ailing for three weeks, but her illness had only taken an acute course a few days previously. It began with lassitude and loss of appetite; she soon became so weak as to be unable to leave her bed, and had fever and repeated rigors. It was soon found that her disease was not small-pox, and she was transferred to a ward for general skin affections. At this time the character of the eruption was clearly marked. At the root of the neck, on the front of the chest over the sternum, and around and between the mammæ, groups of small vesicles had formed on an inflamed base. The vesicles had enlarged; their contents became cloudy and yellowish; a number of vesicles had coalesced, and, bursting, had formed brownish yellow and adherent crusts. The skin around the vesicles was intensely inflamed. The eruption had first appeared on the external genitals. The labia majora, mons veneris, and the neighbouring skin of the abdomen and inner part of the thighs were, on the date of the patient's transference to another ward, covered with large, yellowish crusts, and vesicles in various stages of development.

In the course of the following week groups of similar vesicles appeared on the face, over the whole chest and abdomen, on the arms (where the patient complained especially of severe pain), and on the front of the thighs and legs. Thus rather more than a fortnight after admission the eruption had reached its height, and the front of the body was almost entirely covered with yellowish crusts; these began to dry up and exfoliate, first at the root of the neck, without the occurrence of ulceration and loss of substance.

At this time were found near the ankles several large bullæ, containing slightly cloudy fluid, resembling those of pemphigus. The patient, who had some days previously complained of "cold along the back," and had a pulse of 96, began to feel warmer; her pulse was found to be 92. She had repeated rigors, and was so weak that she could not raise herself in bed. No observations were made of her temperature. Her treatment throughout was mainly expectant; she was allowed chicken and wine, and anything she fancied. For the pyæmic symptoms she took quinine, and a lotion composed of six grains of perchloride of mercury and one pint of lime-water was applied to the genitals. As the pain prevented her sleeping she was ordered half-drachm doses of chloral hydrate at night. On June 15th, Professor Hebra had, as an experiment, her left leg bandaged with strips of diachylon plaster, but without any striking result.

On June 17th the patient was safely delivered of a healthy child.

This was her second pregnancy; in the first she miscarried. On the 19th she was going on well; was cheerful, and the lochia were normal. The eruption was scaling round the neck. On July 5th she had a slight attack of hospital dysentery, and was treated with tincture of perchloride of iron in fifteen-minim doses three times a day, and with dilute sulphuric acid. At this time she had no sign of any fresh eruption and was scaling rapidly. On July 25th, when the last note was taken, she was almost convalescent; her face (which was the part least affected) was quite normal, as also her chest, and the remainder of her body was rapidly becoming free from scales.

In some remarks upon this case, Professor Hebra said, that, in his very considerable experience, he had only as yet seen five such cases, of which this was the fifth. They all occurred in women at full time except one, which took place during the course of pregnancy; the first four all terminated fatally. They all resembled one another in beginning in the region of the genitals; in their general diffusion over the body in a later stage; and in the herpetic character (groups of vesicles on the same inflamed base) which they presented. They were all accompanied by fever and rigors. The disease might be called "herpes impetigiuiformis" from the appearance of the crusts. There was no restriction to the course of certain nerves as in an ordinary zoster. Finally, it was a most dangerous disease.

Art. 71.—*On Syphilitic Alopecia.*

By M. Alfred Fournier.

(*Annales de Dermatologie et de Syphiligraphie*, No. 1, 1872.)

"The only symptom constituting this affection is falling of the hairs, for no other phenomenon is ever associated with it. The hair falls, and this is all. Syphilitic alopecia in fact is absolutely indolent, and is not accompanied by pruritus, local heat, or itching.

"With regard to situation it is remarkable by having no fixed special localization; a negative peculiarity which differentiates the syphilitic from other forms of alopecia. Thus it is produced almost indifferently over all parts of the cranium, over the sinciput as well as over the temporal regions, at the back as well as over the front. The whole scalp is its domain.

"With other forms of alopecia, on the contrary, a special region is affected, and in this, to the exclusion of every other, the affection is concentrated. Senile calvities, for example, is invariably limited to the front of the head, and respects the lateral or posterior parts. There is nothing like this in the alopecia of syphilitic origin.

"Let me add also that many forms of alopecia of diverse origins proceed with a truly symmetrical regularity, and decimate the scalp to an equal extent on both sides. It is quite the reverse with syphilitic alopecia, which affection being essentially irregular and capricious, observes no symmetry, and affects in a most irregular fashion the homologous parts of the cranium.

"With regard to form, syphilitic alopecia presents itself under two

aspects. It sometimes thins the hair in an almost general fashion. The hairs are then less abundant, and not so thickly set. At other times it is concentrated in a series of small patches disseminated over the hairy scalp, which it decimates to denudation, respecting, relatively at least, the adjacent parts.

"Both these forms of alopecia are very common. The latter is most frequently observed when the scalp has been much affected by syphilis. It is this form also which impresses on syphilitic alopecia its most special character. These two forms frequently co-exist and are observed associated on the same subject.

"Syphilitic alopecia may be more or less intense and may be arranged in four degrees.

"1. In the majority of cases, especially in those where the diathesis has been treated in good time, there is only a slight falling of the hair. The depilation is not sufficiently advanced to become apparent.

"2. It often occurs however that alopecia acquires a greater degree of intensity, and then can scarcely fail to escape observation. The hairs fall in profusion. The patients at last cease to comb the hair. The passing of the hand merely among the hair suffices to detach a dozen or more.

"3. The alopecia sometimes, though much less frequently, is still more exaggerated and becomes excessive. Here we have at the same time both general thinning of the hair and disseminated islets where the scalp appears to be quite smooth and white.

"4. Finally, and in quite an exceptional fashion, the alopecia may be *total* or almost so. All the hairs fall or there remains but an insignificant number. I have observed this in only one case. The patient, who was a young woman, had after a severe attack of syphilis lost all her hair. I exaggerate, however, in saying *all*, for one day I counted seventeen hairs on the scalp. I should state that this extreme degree of syphilitic alopecia is in the opinion of all authors extremely rare and almost unheard of in the annals of science.

"Let me state also as a last detail that syphilis does not always restrict its action to causing a falling off of part of the hair. It very often impresses on those which remain, those which do not fall off, some singular characters, which though scarcely noticed by men, do not escape the coquetry of women. The hairs under the influence of the diathesis sometimes lose their normal *lustre;* they become dull, dry and woolly, and resemble dead or false hairs. As M. Diday has justly remarked, 'the patient though wearing his own hair seems to wear a wig. One of my female patients latcly complained to me of this unusual condition.' 'I do not know what is the matter with my hair,' said she; 'I attend to it carefully and grease it with oil and pomade, but still it is always dry, rough, and dull.'

"Syphilitic alopecia is never a permanent affection. It may last for some weeks, generally for several months, and occasionally for a year or longer. It then yields and finally ceases. Even without treatment it may be arrested, as has been proved to me by a number of my patients who have not submitted themselves to treatment until at an advanced stage of the diathesis. After the arrest of the alopecia it always and invariably happens that fresh hairs grow, that the denuded patches are

refurnished, and that the hairy scalp finally returns to its normal condition, it being understood that the hairy scalp has not been injured by deep and veritably ulcerative lesions. With this reserve, the ravages of syphilitic alopecia are always repaired, and even the most severely affected patients have their hair entirely restored.

"I would remark for a few moments on some prejudices existing in society with regard to the origin of certain forms of calvities. And here is one of the most accredited of these. In speaking of a bald man, the ungraceful remark is often made that "the baldness has been produced by the venereal disease." This calumny is not supported by facts. For, indeed, *venereal disease never does make men bald.* Never by his own fault alone can a man become bald. Syphilis, indeed, may give rise to temporary baldness, as in those exceedingly rare cases of syphilitic alopecia degenerating into veritable calvities; but the baldness lasts but for a time, and the hair soon grows again, and the head is again furnished as before.

"We see daily numerous examples of this restoration of the hair after syphilitic depilation. Very many of my patients, who had lost more or less of their hair, and some who had even become almost quite bald, when returning to me for some other cause were found to possess very abundant hair, with which, and most of them were females, they were well contented. The patient who had no more than seventeen hairs on her scalp, has now a very fine head of hair, although she has not always followed her treatment with exemplary strictness.

"Very frequently we are spectators of this reparative process. In many of the patients who remain in the wards for some time we may see, after an attack of syphilitic alopecia, the hairs spring up again and increase rapidly in size.

"This restoration of the hair sometimes commences before the syphilitic diathesis has been attenuated in its principle or arrested in its evolution. Very frequently the alopecia is arrested and becomes repaired even when other specific symptoms arise or are about to arise. It is necessary then to consider baldness, like many other manifestations of the same nature, as a *transitory* symptom of syphilis, in which is involved but a certain duration, as an affection analogous, for example, to precocious syphilis; as an affection, finally, which disappears and is repaired after a time, without compromising in any way the future course of the disease or interfering with the ulterior evolution of the diathesis.

"From the above remarks it results that syphilitic alopecia, that form of baldness which afflicts so many patients, women especially, is not really a serious affection. It is a lesion essentially temporary, insignificant in itself, and causing some inconvenience or trouble for a time, but one which is always repaired, and followed by no bad results. Syphilis is not among those diseases from which may be derived persistent calvities.

"*Treatment.*—1. Syphilitic alopecia does not require any local treatment. 2. Time and proper general treatment are amply sufficient to enable one to deal successfully with this lesion, which is essentially transitory."

Art. 72.—*Report of a Case of Purpura.*

By E. D. Mapother, Surgeon to St. Vincent's Hospital.

(*Medical Press and Circular*, April 10.)

At a meeting of the Surgical Society of Ireland on March 5th, Dr. Mapother mentioned a case that had greatly interested him, in the hope that he might elicit some information respecting it from their friend Mr. O'Grady. It was a case of a commissionaire, whom he had known for many years in connexion with one of the clubs, and four years ago Mr. O'Grady had operated on his upper extremity through the shoulder-joint, for malignant disease of the humerus. For the last three or four months the man had been suffering from purpura of his lower limbs. He could never rise from his bed that a large number of purpuric spots did not break out under the cuticle. Dr. O'Grady and he (Dr. Mapother) had seen the man several times, but they could not arrive at any conclusion as to the cause of the phenomenon. There was no hæmorrhage, but the enormous quantity of blood shed under the cuticle was undermining the man's health. He had passed, when a soldier, many years of his life in India, and suffered from hepatic disease. He presumed that the result was a condition of the liver which might delay the circulation through the portal vein and the vena cava. That was the only way he could account for the purpuric spots in this case. He might remark, in connexion with this matter, that the terribly fatal character of the small-pox in the present epidemic, was owing, in a great measure, to hæmorrhage or effusion of blood.

Mr. E. S. O'Grady said he had very little to say about the case, which was that of an extern patient, and he had been unable at the time to come to a satisfactory conclusion in his own mind respecting it. Dr. Mapother had forgotten to mention that there were some of these purpuric spots on the man's forearm. He also had disease of the supra-renal capsules. He did not bleed much during the operation through the shoulder-joint, and the axillary artery was secured by acupressure. An occurrence took place some days after the amputation of the arm which was worth mentioning. The stump was greatly swollen, and one of the sutures having been removed to give vent to the fluid, a considerable quantity escaped, evidently the secretion of the remaining portion of the capsule, and this fluid was deeply tinged with blood. There was no bleeding afterwards.

Dr. Fleming said that, at the time of the first establishment of the fever-sheds in 1847, he had noticed many cases of small-pox complicated with purpura.

Dr. Minchin observed, that in corroboration of the remarks of Dr. Fleming, he had seen a number of these purpuric cases as complications of small-pox, during the latter months of the year 1847. He had also a distinct recollection, that in the same year, many cases of the epidemic typhus which prevailed, were accompanied with purpura. Among the cases that came under his care at the Temporary Fever Hospital, Glasnevin, at that time, there was one in which a young woman sank on the 7th or 8th day from the effects of abortion; in that case the

post-mortem examination revealed a purpuric condition of the heart, pericardium, and peritoneum; the fœtus, which had been expelled, was also found thickly covered with purple spots.

Art. 73.—*Pemphigus Produced by the Administration of Iodide of Potassium.*

By Freeman J. Bumstead, M.D., Clinical Professor of Venereal Diseases at the College of Physicians and Surgeons, New York.

(*American Journal of the Medical Sciences*, July, 1871.)

The following case, the first of the kind Dr. Bumstead has ever met with, deserves, from its rarity, to be placed on record:—

"W. F., aged twenty-eight, Irish, entered Ward 10, Charity Hospital, December 21, 1870. His venereal history, as given by himself, was imperfect. He acknowledged having had gonorrhœa eight years ago, and again six years ago, but denied having had any sores upon the genitals, or any of the ordinary early secondary symptoms of syphilis. Fourteen months ago he began to suffer from 'swelling of the feet and pains in the tibiæ, felt chiefly at night.' Last February, ecthymatous ulcerations made their appearance upon the legs, and one was situated over right patella; it was for these that he sought admission to the hospital. The interne of the ward prescribed for him, on December 23rd, a mixture containing twenty grains of the iodide of potassium, to be taken twice daily.

"On the evening of the following day, after having taken only three doses, the patient complained of heat, and a burning sensation in his face and hands, which were observed to be reddened, and the medicine was at once discontinued.

"I saw him for the first time on the afternoon of the next day, December 25th, and found him in a decidedly cachectic condition, with small purpuric spots thickly covering his feet and the lower portions of his legs. But the eruption to which I desire to call attention, and which had made its appearance since the evening before, was one of very large bullæ, some of them an inch and a half in diameter, situated upon the back of the neck, the forehead, the face, and upon the backs of the hands—in other words, upon those portions of the integument which were exposed to the air. Some of these bullæ were filled with a clear serum, others were turbid, and of a reddish or purplish colour from the admixture of blood, while the skin around them was somewhat reddened and œdematous. In the course of a few days, most of them had become ruptured and were drying and disappearing.

"In evidence of the fact that this eruption was produced by the iodide of potassium, the patient reported that on three previous occasions during the last year he had taken the iodide at the recommendation of different physicians, and always with the same unpleasant result. After the disappearance of the eruption he has felt better, and his syphilitic symptoms have improved."

Art. 74.—*On Lupus Erythematosus.**

By Moriz Kohn, M.D.

(*Allgemeine Wiener Medizinische Zeitung*, No. 49, 1871.)

In the year 1845 lupus erythematosus was regarded as being merely congestive seborrhœa. About twenty years ago the characteristic signs were strictly defined for the first time by Cazenave and the diagnosis therefore considerably promoted. The greatest attention however has hitherto been paid only to the local symptoms of this exanthem. In late years it has been proved by close investigation, that in many cases lupus erythematodes is combined with general and sometimes life-menacing symptoms.

Dr. Kohn thinks it especially necessary to distinguish two forms of the eruption. The first is the *circular* form, to which he would give the name of lupus erythematosus orbicularis. This form is generally seated on the face. It presents in the centre a cicatricial depression; and there is protuberant thickening containing hypertrophied and dilated follicles.

It has recently been learnt from clinical experience, that it may at times, though very rarely, present itself on the fingers and toes and also on the trunk.

The second is the *aggregated* form. Here the eruption no longer appears to be circular. This may be described as lupus erythematosus aggregatus. The chief distinction between the two forms consists in the facts that in this form the disease most frequently takes a chronic course and that the general condition is but slightly or not at all altered. One has here to deal with local symptoms when the eruption is associated with burning pains and itching.

The aggregated form of lupus erythematosus takes quite a different course. Sometimes, indeed, it is a chronic affection, but most frequently it consists in a subacute or acute eruption, which is associated with fever and dangerous symptoms, and may even end seriously. This form of efflorescence therefore in relation to prognosis is to be regarded with suspicion.

In some cases of acute eruption there may be felt in the deep parts of the integument painful tubercles varying from the size of a bean to that of a hazel-nut, which gradually involve the whole thickness of the skin and those of primary lupus eruption attack the surface of the skin.

In other cases the acute eruption is accompanied with rheumatoid articular pains, chiefly in the wrist, elbow, and knee-joints. There may also be osteoscopic pains in the tibia and other long bones, which may cause this disease to be regarded as syphilis and to be treated by anti-syphilitic remedies, but with no good result.

In three cases the eruption was associated with hæmorrhagic spots and vesicles. The most unfavourable complication, however, is that of erysipelas, which frequently takes the form of erysipelas faciei migrans,

* Communicated to the Gesellschaft der Aertze, Vienna.

and ends fatally. In other cases the eruption is associated with adenitis. In one case Dr. Kohn observed parotitis and adenitis of the maxillary gland.

The eruption may also be complicated by fever, and typhoid and comatose symptoms. In other cases again there seems to be a close connexion between the skin affection and chlorosis or tuberculosis, and then the amelioration of the general affection is followed by an improvement of the local symptoms.

Dr. Kohn resumes by stating that two different forms of efflorescence must be distinguished, one presenting itself as lupus erythematosus orbicularis, the other as lupus erythematosus aggregatus. It not unfrequently occurs, however, that these two forms are associated together. The affection occurs more frequently in women than in men. In 22 cases recently observed, 15 women were affected and 7 men. Six cases were fatal. The post-mortem in three cases revealed pulmonary tuberculosis, in two cases pleuritic exudation, and in the remaining case hydrocephalus and arachnitis.

With regard to the pathological anatomy, Dr. Kohn confirms Neumann's assertions. The sebaceous and sudoriferous glands were found to be in a state of atrophy and also the connective tissue of the skin. With regard to treatment, the local use of tar and quicksilver was relatively the most successful.

SECT. III.—FORENSIC MEDICINE.

ART. 75.—*On the Distinctions between Edible and Poisonous Mushrooms.*

(*The World of Science*, December 10, 1871.)

A writer, under the initials W. G. S., gives the following concise account of the differences between the edible mushroom and the poisonous fungi resembling it. First and foremost, the true mushroom (Agaricus campestris) is invariably found among grass in rich open pastures, and never on or about stumps or in woods. Many cases of poisoning have occurred owing to the supposed mushrooms being gathered from stumps or in woods. It is true there is a certain variety found in woods and woody places (A. salvicola), but as far as amateurs are concerned, it is best left alone. A second very good point is the peculiar intense purple-brown colour of the spores (which are analogous to seeds); the ripe and fully-matured mushroom derives the intense purple-brown colour (almost black) of its gills from the presence of these innumerable coloured spores. To see these spores, and to become acquainted with the peculiar colour, remove the stem from a mushroom, and lay the upper portion, with the gills lowermost, on a sheet of writing paper; in a few hours the spores will be deposited in a thick, dark, impalpable powder. Several dangerous species, at times mistaken for this mushroom, have these spores umber-brown or pale umber-brown in colour, and belong to *Phaliota* or *Hebeloma*. There are innumerable varieties of the true mushroom (and of the horse mush-

room), but all are equally good for the table. Sometimes the top is white and soft, like kid leather; at other times it is dark-brown and scaly. Sometimes, on being cut or broken, the mushroom changes colour to yellow, or even bright red: at other times no change whatever takes place. But observe, the mushroom always grows in pastures; always has dark, purple-brown spores; always has a perfect encircling clothy colour, and always gills which do not touch the stem, and a top with an over-lapping edge.

Art. 76.—*Recovery after Swallowing One Hundred Grains of Chloral.*

By B. Browning, M.R.C.S.

(*British Medical Journal*, December 2, 1871.)

Mr. B. Browning records the following case of this:—"An anæmic middle-aged woman, while suffering from facial neuralgia, swallowed, at one draught, a recently-prepared syrupy solution of chloral hydrate, which contained over 100 grains of that drug. She immediately complained of 'intense burning pain in the throat, gullet, and stomach;' and when I saw her (about three-quarters of an hour subsequently), she was screaming, and almost convulsed with agony—so much so, that it was with the greatest difficulty she could be restrained from throwing herself out of her bedroom-window into the road. Her pulse was small and very rapid; the countenance was livid and bathed in sweat; an odour of chloroform was plainly perceptible in the breath, and no trace of narcotism had been observed, even for a moment. After an ineffectual attempt to bring on vomiting, I injected hypodermically half a grain of morphia over the epigastrium, and directed milk to be freely given. On visiting her in three hours' time I found her somewhat relieved, and accordingly injected another half grain of morphia, and suggested the cautious use of stimulants with the milk. On the following morning she was free from all pain of any description, though very weak, and has since done well; a slight return of neuralgia being at once checked by another employment of the hypodermic syringe and ferruginous tonics.

"The usual hypnotic effects of the chloral were here 'conspicuous by their absence' from first to last; no drowsiness even, much less sleep, having set in during the period of its elimination from the system; yet in a previous neuralgic attack, twenty grains only had procured a good night's rest for this person. I can vouch for the amount, as well as the goodness, of the chloral taken by her; and think that, as deaths have been reported after the administration of sixty, forty-five, and even twenty-five grains of this remedy, she may be deemed fortunate in escaping so readily."

Art. 77.—*Phosphorus Poisoning Cured by Oil of Turpentine.*

By Dr. Lichtenstein.

(*Berlin. klin. Wochenschr.*; and *American Journal of the Medical Sciences*, July, 1871.)

Dr. Lichtenstein reports the case of a girl, nineteen years old, who cooked a steak of meat with the heads of eight friction matches, and partook of the same for food. Soon after—precise time not given—she was attacked with a pain in the stomach, and vomiting of phosphorescent matter, mixed with coagula of blood. Twelve drops of Ol. Terebinthinæ in milk being administered, the pain in the stomach and vomiting ceased. Subsequently the vomiting returned, the discharges presenting traces of blood, but none of phosphorus. An emetic of ipecacuanha and tartrate of antimony was given, and the turpentine in barley-water continued. The vomiting now became almost entirely free from blood, till at the end of two hours the only complaint made was loss of appetite; no after symptoms. The case is adduced by Dr. Lichtenstein as a further evidence of the correctness of the reports of Personne, Andans, Köhler, and others, in favour of oil of turpentine as an antidote against poisoning by phosphorus. In a comment upon the report of Dr. Lichtenstein and his conclusion, Dr. Schultzen remarks that, during the past few years he has observed, in the wards of the Berlin Charité, some thirty to forty cases of phosphorus poisoning, of which nearly one-half terminated favourably, notwithstanding no oil of turpentine was given. The prognosis of a favourable event is to be based solely upon the occurrence of a free vomiting, either spontaneously or induced, soon after the poison has been taken. In Dr. Lichtenstein's case, vomiting set in immediately after the phosphorus was swallowed; and, according to Dr. Schultzen, to this is to be mainly, if not entirely, attributed the safety of the patient.

SECT. IV.—THERAPEUTICS.

Art. 78.—*Clinical Thermometry.*

By Lucius D. Bulkley, M.D.

(*The Medical Record*, April 1.)

At a meeting of the Medical Society of the County of New York, February 26, Dr. Lucius D. Bulkley read a long and elaborate paper upon this subject, illustrated by numerous mural diagrams and tables. The paper was based on the essay to which was awarded the Stevens' Triennial Prize two years ago, and its purpose was not to present a history of clinical thermometry, or an epitome of what it had accomplished, but rather to contribute new data for the thermometrical study of disease, in a systematized record of the experience of the New York Hospital for the three years prior to August, 1869, and to state briefly the conclusions which that experience tended to establish.

The number of cases in which a record of temperature was regularly kept amounted to 337, classified as follows :—typhoid fever, 93 ; typhus fever, 23 ; pneumonia, 64; erysipelas, 24; acute rheumatism, 17 ; remittent fever, 12 ; intermittent fever, 7 ; scarlet fever, 7 ; phthisis, 19 ; acute meningitis, 9 ; tonsillitis, 7 ; peritonitis, 6 ; miscellaneous, 49. Besides the temperature, the pulse and respiration were always recorded, and the doctor had tabulated all the cases under each disease with reference to these three vital signs. Forty or fifty of those most interesting, either from their typical character or from some other circumstance, were given in detail, with diagrams showing the curves of the three signs. Each diagram was the record of an actual case, and faithfully exhibited every failure of observation ; there were no typical curves made up from the generalization of many cases, as in Wunderlich's book.

The nature of the paper precludes any extended abstract, but we hope to see it published as a monograph. It is quite time that the wealth of experience, so long carefully hoarded in the case-books of the New York Hospital, should be brought out for the use of the profession. We here confine ourselves to the doctor's concluding summary of the chief points he considers established :—

" 1. The body heat is maintained in health, under all conditions, at the uniform standard of 98·4° Fahr.

" 2. Any constant deviation from this constitutes disease.

" 3. A return to and continuance at this standard marks the termination of the disease.

" 4. A single high temperature is important.

" 5. The changes of temperature in diseases follow definite and known courses.

" 6. Variations from these typical ranges of temperature in disease are significant, as indicating a disturbing cause.

" 7. An irregular course is more unfavourable than a uniformly high range of temperature.

" 8. Different temperatures characterize different diseases, and various days of the same disease.

" 9. Although a high temperature indicates a more severe attack, no heat under 109° can be considered surely fatal.

" 10. The daily study of the pulse and respiration in connexion with the temperature is of great assistance.

" 11. When the temperature and general symptoms agree, but the pulse disagrees, the two former are to be relied on.

" 12. When the pulse and general symptoms agree in indicating unfavourably, the temperature cannot be relied on, if contradictory, unless the improvement in respect to temperature is marked and persistent.

" 13. When pulse and general symptoms agree in a favourable indication, a high or rising temperature should arrest attention.

" 14. All other means of investigation should be used in connexion with the temperature to obtain the greatest benefit from the latter.

" 15. The continuous daily record of the three vital signs here represented, in the way exhibited, affords much aid in the diagnosis, prognosis, and treatment of disease, by the presentation to the eye of its history in these respects.

"16. The systematic record of these three points may assist in determining, at some future day, the vexed question whether the type of disease is changing, by preserving pictures which can be easily compared."

Art. 79.—*The Administration of Stimulants.*

By Dr. Lionel S. Beale, F.R.S., Fellow of the Royal College of Physicians; Physician to King's College Hospital.

(*Medical Times and Gazette*, March 2, 1872.)

In his lectures on the principles of the treatment of fever, Dr. Beale says, if at the outset we have any reason to apprehend that an attack of fever is going to be severe, it is very desirable to administer small quantities of alcohol early in the disease. In this way the stomach may be accustomed to the remedy; whereas, if its use is postponed until the patient is very ill, and alcohol required in very large doses, the stomach is often in so highly irritable a state as to reject it. The patient's life may be in jeopardy from this circumstance, or fatal exhaustion alone may actually destroy him.

Of giving Alcohol to Young Persons.—Dr. Beale's conclusions as regards giving alcohol to the young are in the main not at variance with the opinions of those who advocate extreme temperance. His own experience leads him to believe that the majority of young healthy people would do well without alcohol; and he believes the habitual daily consumption by young persons—even of a moderate quantity—of wine or beer, is quite unnecessary, and mere waste, while in some instances it is positively injurious to health. At the same time, there can be no doubt that in certain cases where the health fails in children, and even in infants, great benefit results from giving small quantities of wine daily for a short time. Hard-working people, students, professional men, and people actively engaged have been advised to take stimulants, as a general rule—and some, no doubt, require them; but Dr. Beale believes many would enjoy very good health without any alcohol at all, while the recommendation that they should take plenty of claret or other light wine is bad advice for several reasons. Not only is a bottle of light wine not required, but in many cases it is actually injurious. That people who can get it will often take a bottle of light wine, and more, is quite certain; but that they require it, or that it is good for their health, will not bear discussion.

Up to the age of forty very little stimulant is, as a general rule, really desirable for healthy persons, and Dr. Beale expects most people of average health would get on better without any. His own personal experience, he writes, is this:—He was "never very strong, though always able to get through a very considerable amount of physical exertion without suffering from fatigue. Up to the age of forty I hardly ever touched stimulants of any kind, and when I did take a little I not unfrequently experienced an attack of sick headache before my ordinary condition of health was restored. Lately, however, I have found the advantage of half a tumbler of ale daily; and I can bear half an ounce and sometimes three or four ounces, of wine without suffering. I dare

say, as I grow older, I may, like most persons, require a little more; but when in the country, and taking plenty of exercise, I feel very well and contented without any stimulants whatever. The experience of some members of my family who have lived to be old, and that of many persons of whom I have inquired, accords with my own. In old age, I believe, stimulants are really necessary, and sometimes are even more important than food itself. I feel sure the life of many old people is prolonged by the judicious use of alcohol, and I think that some, who have been very careful all through life, take far too little stimulant when they grow old."

ART. 80.—*Elimination of Alcohol.*

By A. DUPRÉ, M.D., Assistant Physician to the Westminster Hospital.

(*Medical Times and Gazette*, February 17.)

Dr. Dupré has recently presented a very important paper to the Royal Society "On the Elimination of Alcohol." Obviously, one of three results may follow the ingestion of that liquid—either all the alcohol may be oxidized, and none eliminated unchanged; or a portion only may be oxidized, and the rest eliminated unaltered; or all the alcohol may be eliminated unchanged. If all the alcohol be eliminated unaltered, it follows that if a certain amount of alcohol be administered daily, the quantity eliminated would increase from day to day, till eventually a state of equilibrium would be attained, and the amount eliminated each day would equal the amount ingested. If, on the contrary, all the alcohol were either oxidized or eliminated within a period of twenty-four hours, no increase in the daily elimination will take place as a consequence of the alcohol diet. The author undertook two series of experiments, in which the quantity of alcohol eliminated by both kidneys and lungs was determined. His results are thus summed up: "The amount of alcohol eliminated per day does not increase with the continuance of the alcohol diet; therefore all the alcohol consumed daily must, of necessity, be disposed of daily; and as it certainly is not eliminated within that time, it must be destroyed in the system. The elimination of alcohol, following the ingestion of a dose or doses of alcohol, ceases in from nine to twenty-four hours after the last dose has been taken. The amount of alcohol eliminated, in both breath and urine, is a minute fraction only of the amount of alcohol taken."

Dr. Dupré confirms M. Lieben's observation that a substance exists in the urine of man, and in the urine of various animals, which is not alcohol, though it yields iodoform. The author found, that after six weeks of total abstinence, and even in the case of a teetotaler, that this substance, the precise nature of which has not been determined, is eliminated in the urine, and perhaps also in the breath. The quantity met with in the urine is very small, and it was found that after the elimination due to the administration of alcohol had ceased, the amount of the substance eliminated in a given time at first remained below the quantity normally excreted, and only gradually rose again to the normal standard.

The presence of this body in urine must throw great doubt on many of the previous determinations of alcohol in urine. It passes over with the first portions of the distillate, it yields acetic acid on oxidation, gives the green reaction with bichromate of potash and sulphuric acid, yields iodoform, and its aqueous solution has a lower specific gravity and a higher vapour tension than pure water.

Art. 81.—*Bichloride of Methylene.*

By F. Searle, M.R.C.S.

(*Dublin Journal of Medical Science*, February, 1872.)

Mr. F. Searle adds his testimony in favour of this anæsthetic. In 1870 he administered it to more than 100 cases in the West of England Eye Infirmary, and has since used it in private practice. He has given it in all ages, from 6 months to 70 years, without a single cause for alarm, vomiting even being exceptional. It is important not to allow the patient to escape from its first influence, otherwise excitement ensues.* In Padua, bichloride of methylene has been employed for three years in the surgical clinic to the exclusion of ether and chloroform, being sent over from London by Messrs. Robin. Out of 108 operations performed under its influence, Dr. Rossi states that 52 patients slept tranquilly without any muscular agitation within from 1 to 5 minutes; 32 experienced slight excitement and became insensible in 8 or 10 minutes; 4 only were violently agitated, and sleep was not induced from 15 to 20 minutes; 20 remained completely free from its influence even after 50 minutes of inhalation. Vomiting occurred in 8 instances. No other accident declared itself, and the liquid excited no cough, but slight lachrymation. The pulse and respiration were increased in frequency from the first, but soon returned to the normal state, and even fell below it. The face underwent no change of colour.† These results correspond in many particulars with those previously attained in England by Mr. Miall and Mr. Gaine, and this anæsthetic seems well worthy of future trial.

To the three *deaths* already recorded as happening under its use must now be added another from the Radcliffe Infirmary, Oxford. Bichloride of methylene was administered on a flannel bag to a woman, aged forty-four, who was about to undergo an operation for cancer of the breast. After two or three convulsive gasps the patient died, though the quantity administered was small.

Art. 82.—*Lactic-Acid Theory of Acute Rheumatism.*

By Balthazar W. Foster, M.D.

(*British Medical Journal*, December 23, 1871.)

Dr. Balthazar W. Foster relates two cases of diabetes, for the cure

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* *Lancet*, May 27th, 1872.

† *Journ. de Pharm. et de Chim.*, September.

of which lactic acid was given, and in both the medicine caused an attack of acute rheumatism.

Dr. Foster remarks :—"The above record contains an account of the joint-symptoms which were observed in two cases to follow the administration of lactic acid. In the first case, at least six well-marked arthritic attacks occurred; in the second case, under conditions less favourable for observation as to duration of treatment and place, one well-marked attack occurred. The phenomena corresponded in all respects to those which are characteristic of acute articular rheumatism. They came on when the acid was taken, and ceased when it was discontinued. When moderate quantities of the acid were tolerated, an increase in the dose was succeeded by the painful inflammation of the joints. Coinciding with the development of the articular affection was the appearance of perspiration, at first only slight, but afterwards, in the more severe attacks, copious and acid.

"These facts have dispelled the last lingering doubt in my mind as to the truth of the lactic-acid theory of rheumatism. At first I doubted the connexion between the administration of the acid and the production of the rheumatic phenomena. In my scepticism, I regarded it as an accidental combination. The recurrence of the joint-symptoms, however, on March 13th, following distinctly on the repetition of the lactic-acid mixture, shook my disbelief. The coincidence of joint-attacks with the use of the drug might occur once, and I thought even a second time; but, when I found it occur over and over again, there was no room for the hypothesis of coincidence. To refer Wright's attacks to a series of accidental combinations requires, in my opinion, a much livelier faith than to accept the lactic-acid theory of acute rheumatism. If, to some, Wright's case presents not evidence enough in the beautifully typical character of the artificially produced disease, and in the precision with which it could be manufactured at the will of the experimenter, then the second case comes in to refute any explanation founded on the assumption of an idiosyncrasy on the part of one patient.

"In health, no doubt, much larger quantities of lactic acid than any given in my cases would be excreted without producing any perceptible disturbance in the bodily functions. The acid would escape by the skin, the kidneys, or, after oxidization, as carbonic acid and water. It cannot be justly argued that the quantities of acid taken by my patients were too small not to have escaped in this way. The conditions under which the drug was given must be borne in mind. In diabetes we have a state of suboxidization very unfavourable to the conversion by oxidation of new compounds; and in Wright's case this was aggravated by the serious pulmonary complications. Associated with these, there was a dry and branny state of the skin highly unfavourable to the elimination of the lactic acid by one of the common channels. Lastly, the well-known persistent acidity of the urine in diabetes points to a pre-existing hyperacidity of the fluids. These considerations are, I think, important, as defining the conditions under which the experiments were made—conditions most favourable to the development of the specific effects of the lactic acid. It was the combination of all these which rendered

Wright so susceptible to the action of the drug. By the absence of one of them (the lung-complicaion), and the minor degree of glycosuria, we may probably explain the slighter susceptibility in the second case. The larger doses of acid which Wright was able to take occasionally, towards the close of his stay in the hospital, find an explanation partly in his more careful management of the remedy, partly in an acquired toleration of it, and partly in the great improvement which occurred under treatment in the state of the respiratory organs and in the sugar-excretions. . . . .

"In this communication, my object has been to lay before the profession facts which have an important bearing on the origin of a common and serious malady. If, by pointing out the nature of the poison of acute rheumatism, they help in the smallest degree to improve therapeutics, they will not have been observed in vain."

Art. 83.—*On the Use of Pepsine Wine in the Artificial Feeding of Infants.*

By W. Jackson Cummins, M.D.

(*Dublin Journal of Medical Science*, February.)

Dr. W. Jackson Cummins made an interesting communication on this subject to the Cork Pathological and Medico-Chirurgical Society. "The value of pepsine," he remarked "in those forms of dyspepsia attended by a deficient secretion of gastric juice, is so well known and generally understood, that it is unnecessary for me to trespass on the time of the Society by more than an allusion to them. In the diseases of children, however, and especially as a substitute for a wet-nurse, when a mother is unable or unwilling to suckle her own child, the benefit of this valuable aid to digestion is not, I believe, as generally known, although allusions to it are to be found in medical essays. . . . .

"There is nothing of course like a good breast of milk for an infant, if it can be had; and in the 'good old times,' when the peasantry and small farmers lived on potatoes and milk, without stimulating their nerves with strong tea, nor their brains with penny-a-liner's novels, there was an ample field for the selection of a foster parent, but now even when that *rara avis*, a good nurse, is procured, she is so independent and knows her power so well, that any caprice must be humoured, and she is always ready to throw up her situation or neglect her charge.

"A wet-nurse is, then, an admitted torment, and a balance struck between its advantage and disadvantage is generally against the former.

"Artificial feeding by bottle is a great improvement upon the old system of spoon-feeding, as the act of sucking stimulates the salivary glands and insures due insalivation, which is an important part of infantile digestion. With such an aid the stomach of most *human* infants is vigorous enough to fall into the way of digesting *cow's* milk, properly diluted, and mixed with sugar and cream to assimilate the proportion of its constituents to human milk—but besides the relative excess of

caseine and albumen contained in cow's milk when compared with human, the coagulum of the latter is 'soft, flocculent, and not so thoroughly separated from the other elements of the fluid as the firm, hard curd of cows' milk is from the whey in which it floats.'—(West.)

"And when we reflect that the digestive organs of the *human* infant are found to digest human milk, and the force of its gastric juice proportioned to the solution of its soft flocculent coagulum, we can understand why the solvent power of its gastric juice is sometimes unequal to redigesting the firm curd of cow's milk. When such is the case, acetous fermentation is quickly set up, offensive gases distend the stomach and taint the breath, vomiting and diarrhœa set in, and in process of time the little patient sinks into a miserable state of marasmus, and dies.

"The remedy for this state of things is simple, for although we cannot change the elementary composition of the milk we have to use, we can introduce into the infant's stomach a digestive power proportioned to the food it has to use—the organic principle of digestion taken from the stomach of the calf.

"It is now many years since I first applied this simple theory to practice in the case of one of my own children, who, when about three or four months old, was reduced to a condition of marasmus by vomiting and diarrhœa, due to imperfect digestion of cow's milk. I ordered him fifteen or twenty drops of pepsine wine, to be given immediately before or after each meal. Soon after commencing it he began to improve, and by degrees all bad symptoms vanished, and nutrition was quite restored. The pepsine was continued until he was nearly two years old, and he throve at least as well as if he had been wet-nursed; other treatment of course preceded and accompanied the use of pepsine, but it was not until the latter was commenced that improvement took place.

"Shortly after a child, born in England, and bottle-fed, was brought over to this country when about six months old; he also was suffering from infantile dyspepsia, and was pining away in a listless, apathetic state, quite indifferent to surrounding objects, and appearing as if he would lapse into idiocy from mal-nutrition of the nervous centres.

"I immediately ordered him pepsine wine, which produced such beneficial effects that after it had been continued about twelve months, he had become a bright, intelligent, well-nourished child.

"Since then I have never recommended a wet-nurse, and have used pepsine wine largely in dispensary, hospital, and private practice, and have seen many apparently hopeless cases recover under its use."

Art. 84.—*Therapeutic Value of the Hypodermic Injection of Ergotine in Hæmoptysis.*

By Currie Ritchie, M.D.

(*The Practitioner*, December, 1871.)

Dr. Ritchie has recently employed this treatment in nine cases of hæmoptysis:—

Case 1.—A. B., aged twenty-two, spat florid blood, in June last, after a

long walk, in considerable quantity. From that time till September had more or less cough, with occasional streaks of blood in sputa; menstruation regular; was then seized, after dancing, with severe hæmoptysis, lasting from two A.M. till eleven A.M., when Dr. Ritchie found her anæmic, with a troublesome cough, and expectorating mouthfuls of blood. Five grains of ergotine dissolved in water were injected into the left arm, and perfect rest in bed enjoined. No expectoration of blood took place after the injection, and two months afterwards she was apparently in perfect health.

CASE 2.—W. S., aged thirty, had mitral regurgitation, with consolidation of apex of left lung. Dr. Ritchie found him, at two A.M. of 20th September, labouring under profuse pulmonary hæmorrhage, which had already lasted one hour. In Dr. Ritchie's presence he expectorated two ounces of florid blood. Five grains of ergotine dissolved in water were injected subcutaneously, the hæmorrhage was at once arrested, and did not return.

CASE 3.—A man aged twenty-six, had purulent expectoration for more than two years, with occasional streaks of blood. On the 26th September came to Dr. Ritchie labouring under severe hæmoptysis, which had lasted for two days continuously, in spite of medical treatment; according to his own account, he had spat up several pints of blood. His face was blanched, and the mucous lining of his lips and cheeks very pale. Five grains of ergotine dissolved in water were injected subcutaneously; not a single bloody sputum followed the injection till the 28th, when a repetition of the injection was followed by a similar abrupt cessation of the hæmoptysis, which, however, recurred on the night of the 29th, probably owing to domestic inquietude from his wife insisting on carrying him off to Ireland.

CASE 4.—F. B., aged sixty-two, had suffered from slight hæmoptysis for several days. Five grains of ergotine in watery solution were injected. At the end of two days the hæmorrhage continued as before; a repetition of the injection was followed by complete cessation of the hæmoptysis, only one or two small dark-brown coagula following the second injection.

CASE 5.—A. F., aged seventeen, had a cavity the size of an orange in the apex of her left lung when first seen, and shortly afterwards was attacked by severe hæmoptysis. Five grains of ergotine in watery solution were injected, and only one single bloody sputum followed the injection. No return of the hæmorrhage had taken place a month after when last seen.

CASE 6.—J. C., aged twenty-two, spat blood in May last for two or three days, and again a fortnight later. She remained in fair health till 11th October, when hæmoptysis again occurred to the extent of "nearly a quart of bright red blood" before Dr. Ritchie saw her. Five grains of ergotine in watery solution were injected and no more blood was expectorated till the 15th, when, after a severe fit of coughing, a streak of blood was detected on three several occasions in the sputum. In this case the injection produced a good deal of pain and induration round the seat of puncture, lasting till the 19th October.

CASE 7.—K. M., aged nineteen, had slight hæmoptysis for several days; a few hours before being seen had spat up several mouthfuls of pure blood. Five grains of ergotine in watery solution were injected subcutaneously; only one bloody sputum followed, and a fortnight later there had been no return of the bleeding.

CASE 8.—J. W., aged twenty-eight, caught cold in March last, and continued to expectorate phlegm for two or three months; he then caught a fresh cold, and ever since his sputa have been streaked with blood. The sputa are tenacious, not frothy; expectorates most blood when at work, but feels easier there. Five grains of ergotine in watery solution injected on 1st November. Expectoration of blood took place once on 1st

November, and once on the morning of the 2nd; but, in the afternoon of the 2nd, it became considerably increased, and continued till the 6th. So much irritation had been produced by the injection, that Dr. Ritchie did not repeat it till the morning of the 7th, when three grains of ergotine were injected, dissolved in equal parts of glycerine and spirits of wine. There had been no return of the hæmoptysis on the 14th, when last seen, and no trace of irritation from the second injection.

Case 9.—Mrs. D., aged sixty, under Dr. Bowman's care. On the 19th October had been spitting blood continuously for two days, except for about six hours, when there was almost complete cessation. At 3 P.M. on the 19th hæmoptysis recommenced, and she was ordered ten-minim doses of the liquor ergotæ every two hours, without effect. At 9 P.M. she was expectorating blood profusely, an incessant hacking cough compelling her to do so every few seconds. At Dr. Ritchie's suggestion, Dr. Bowman injected five grains of ergotine dissolved in water, after which there was absolutely no hæmoptysis, and when last seen, on the 26th October, she was apparently quite well.

Art. 85.—*On the Therapeutic Actions and Uses of Turpentine.*

By J. Warburton Begbie, M.D.

(*Edinburgh Medical Journal*, July, 1871.)

Dr. Warburton Begbie read a paper on this subject before the Medico-Chirurgical Society of Edinburgh. He gave a brief sketch of the ancient history of the drug from the time of Hippocrates, with a notice of the various forms in which the oleo-resins of the coniferæ are used or have been used in therapeutics. Oil of turpentine was described as being irritant and stimulant, quickening the circulation and augmenting the temperature of the body. In larger doses it produces a sort of intoxication; in drachm doses it is hypnotic. Externally it is a valuable rubefacient, and is absorbed by the skin so as very soon to be recognised in the breath, and by its characteristic violaceous odour in the urine. The production of this violaceous odour in its perfection seems to be a test of the integrity of the urinary organs, as it is less marked or absent in disease of the kidneys. The therapeutic actions and use of turpentine are various:—

1. As a cathartic it is uncertain, but along with castor oil it is useful in cases of obstinate obstruction and tympanitis.

2. As an anthelmintic it is chiefly used as a cure for tapeworm; also, in the form of enema it destroys ascarides and lumbrici.

3. Though turpentine sometimes causes hæmaturia, it cures certain passive hæmorrhages. It is useful in purpura, probably acting through the nervous system; and is useful also in hæmoptysis, hæmaturia, and uterine hæmorrhages.

4. As a stimulant, it is especially valuable in adynamic fevers; as in the stupor of typhus, in certain kinds of delirium, and in the later stages of enteric fever with a dry tongue.

5. In certain nervous diseases, such as epilepsy and chorea, it is said to be very useful; but in epilepsy it is supplanted by bromide of potassium, and in chorea by arsenic. In certain forms of sciatica and crural

or brachial neuralgia in the aged, twenty-minim doses thrice daily have a very good effect. In the nervous headache of delicate females, and the headache which is induced by fatigue, it is a better stimulant even than strong tea, and without the effect which tea so often has of banishing sleep.

6. In all chronic discharges from mucous membranes, such as chronic and fetid bronchitis, it is very useful, and even is advantageous in gangrene of the lung in checking the fetor. Under this head some interesting cases were given of gangrene of lung depending on the presence of foreign bodies.

Art. 86.—*On the Action of Digitalis and Digitaline upon the Respiration and Temperature.**

By M. Gourvat.

(*Gazette Médicale de Paris*, No. 50, 1871.)

"*Action upon the Respiration.*—The modifications undergone by the respiration represent two different types according to the doses of digitaline. MM. Bouley and Raynal and others have observed retardation of the respiratory movements after the administration of small doses, acceleration and intermittence followed at a late period by retardation after poisonous doses.

"M. Legros observed in infants attacked by pneumonia or pleuropneumonia that the inspirations fell from 42 and 32 to 24 in the course of four days under the influence of therapeutical doses of digitaline. M. Dubuc, in a case of poisoning by digitaline, noted that the respiratory movements were 68 in the minute.

"I have very often noticed in dogs, rabbits, and frogs, a kind of periodicity in three periods, in the respiratory movements. A short time after the injection the inspirations become frequent, jerky, and convulsive. To this excessive frequency succeeds a rapid fall; three or four slow and more extended inspirations constitute the second stage; the third stage is represented by an intermittence.

"Some of my tracings show that after a small dose of digitaline the respiratory movements are reduced, and that after a large dose they are more frequent than in the normal condition.

"There is a remarkable parallelism between the modifications impressed upon the circulation and the respiration by digitalis and digitaline.

"Do these substances act alike and simultaneously on these two functions, or do they influence one rather than the other? After considering the special and primary action which they exert on the heart and arterial vessels, I think that the calm or the disturbance which they produce in the circulation involves as a consequence the calm or disturbance in the respiration, and that the latter is attacked but consecutively.

"*Action upon the Temperature.*—The therapeutical employment of

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* Communicated to the Société de Thérapeutique.

digitalis in inflammatory affections has placed beyond doubt a fall of the temperature parallel to the lowering of the pulse, which according to M. Hertz, always precedes it by a few hours. Clinical thermometry allows us to follow closely the course of the defervescence of heat, and it may generally be found that in the course of three or four days after commencing with moderate doses of digitalis the animal temperature falls from 40° or 41° C., its maximum in typhoid, to about 36°.

"MM. Bouley and Reynal have likewise observed this slow and progressive sinking of temperature under the influence of small doses of digitalis, and have seen an elevation by some degrees after the administration of strong or poisonous doses. I have also observed the same in the rabbit, whose temperature in the ear is raised by five or six degrees soon after the injection of one centigramme of digitaline. But this exaggerated calorification is always followed by a fall of temperature, and MM. Bouley and Reynal have observed it to reach the extreme limits of thirty-two and even twenty-five degrees in the last moments of the agony.

"The depression of temperature may be very well explained by the lowering of the pulse, the retardation of the peripheral circulation, and the diminution of the number of respiratory movements under the influence of small doses, whilst with large doses the increased peripheral circulation induces during an early stage an elevation of temperature."

ART. 87.—*The Physiological Action of Digitalis on the Depressor Centres of Reflex Action of the Frog, along with Experiments on the Influence of the Circulation on this Organ.*

By A. WEIL, M.D.

(*Reichert und Dubois-Reymond's Archiv*, 1871; and *Glasgow Medical Journal*, February.)

Certain phenomena have for some time been taken to indicate that in the brain there exists centres which exercise a depressing influence on reflex action. These phenomena are the increase of reflex action in beheaded animals, and also the power which we possess of voluntarily preventing reflex action. With a view to find the seat of these depressor centres, Setschenow conducted certain experiments, the result of which was to show that they are situated in the optic lobes and corpora quadrigemina. The present paper has reference to the action of digitalis on these centres, and also the influence which various changes in the circulation produce on them. The experiments are very elaborate, and are marked by great ingenuity, and the general results deduced may be stated as follows: digitalis reduces the power of reflex action in frogs which had been specially prepared to exhibit reflex action—the degree of this action being tested by the number of seconds during which the leg of such a frog was retained in an acid solution. A similar reduction of the power of reflex action is produced by depriving the animal of blood, also by stopping the heart's action, and to a less degree by retardation of the heart's action. It was also produced by cutting out

the lungs, by placing the animal for some time in an atmosphere of hydrogen, or by poisoning with HS. In these two classes of experiments the depression of reflex action is probably due to the absence of O in the blood, the depression centres being irritated by blood deprived of oxygen. The question then comes, whether the depressing action of digitalis is due to the action of this substance on the circulation, the diminution of the heart's action being the actual cause of the reduction of the reflex action. The experiments conducted with this view seem to show that while the depression is partly due to this latter cause, yet that digitalis has also a direct action on the depressor centres, this being shown by the fact that the depression is much greater than is produced by an equivalent simple diminution of the heart's action, and also that the depression sometimes precedes the retardation of the heart's action. While digitalis acts on the depressor centres, it appears also, after a certain time, to act directly on the reflex centres on the spinal cord. When small doses had been given, and a short time had elapsed, reflex action was recovered, on the removal of the depressor centres by decapitation of the frog, but with larger doses, and after a longer time, recovery did not take place, so that the digitalis had acted on the spinal cord.

Art. 88.—*Crystallized Digitaline.*

By M. Buignet.

(*British Medical Journal*, December 23, 1871.)

M. Buignet, in a report to the French Academy of Medicine, made January 23, on the essays sent for competition for the Orfila Prize, announces that the successful candidate (whose name is withheld until the time for the official declaration arrives) has made a discovery likely to be of very great utility in therapeutics and physiology. It is the production of crystallized "digitaline" in a state of absolute purity. The product has been submitted to a rigorous examination by the Prize Committee, and the superiority of the procedure adopted for the isolation of this active principle is admitted without hesitation. Splendid crystals resembling those of sulphate of quinia, and furnishing a bright emerald green when treated by hydrochloric acid, were exhibited at the last meeting of the Academy, and greatly admired. The chemical perfection of the product has been confirmed by its physiological and therapeutical effects in the hands of MM. Vulpian and Marrotte. Its promptitude and intensity of action are far greater than is the case with the digitaline of Homolle and Quévenne—three milligrammes administered in twenty-four hours producing saturation and intolerance, and one milligramme daily being ill-supported by most patients, so that more than half this quantity cannot usually be given. It is evidently an agent of tremendous power, which will require great caution in its employment, and may prove a fearful weapon in the hands of the poisoner.

Art. 89.—*On the Employment of Nux Vomica and the Salts of Strychnine in the Treatment of Obstinate Vomiting.*

By Dr. Debange.

(*Lyon Médical*, January 7, 1872; *Gazette Hebdomadaire*, No. 6, 1872.)

The author of this communication, relying upon the experiments of Magendie and Marshall Hall, which established the action of nux vomica upon the pneumogastric nerves, has tried strychnine in the treatment of asthma and emphysema with much success. These results have led Dr. Debange to employ the same medicinal agents in certain affections of the stomach, and especially in obstinate vomiting. He reports the case of a young woman, aged twenty years, who suffered from various nervous symptoms, among which figured obstinate vomiting occurring after various hæmatemeses. This vomiting lasted for several days; blisters dressed with morphia had no effect. At last sulphate of strychnia, in doses of two milligrammes, was administered hypodermically. The success was immediate, and in the course of two days the vomiting was arrested. The administration of the strychnia was continued in the same doses for four days, and the cure was permanent.

Art. 90.—*On the Therapeutical Use of the Lacto-Phosphate of Lime.*

By B. W. McCready, M.D.

(*New York Medical Journal*, June, 1871.)

There is reason to believe that phosphate of lime, besides entering into the composition of bone, has some influence in cell formation, and, according to Lehmann, it is found in appreciable quantity wherever cells or fibres are formed. The phosphate has been recommended in cases of rickets, and the experiments of Milne-Edwards seem to show that under its use fractured bones in dogs and rabbits produce more abundant callus. But in a recent series of articles, published in the *Archives Générales de Médecine*, Dr. L. Dusart examines the whole subject, and attributing the somewhat unsatisfactory results hitherto obtained to the great insolubility of the ordinary phosphate, he recommends the use of a new preparation, which he calls the lacto-phosphate of lime, in which the lime-salt is dissolved in free lactic acid. Dr. Dusart made experiments both on the lower animals and on man, and he found that the union of bone, in cases of fracture, was promoted by the use of this preparation, which was also useful in rickets and some other diseases, as diarrhœa and indigestion. In the United States, at Dr. McCready's request, a syrup of the lacto-phosphate of lime was prepared by the pharmaceutists, and he found the drug useful in cases of defective nutrition, especially in the cases of prematurely-weaned children, in rachitis, and in atonic dyspepsia. Dr. W. A. Hammond found it of very

great value in cases of nervous derangement. In forming the syrup of the lacto-phosphate, bone-earth is dissolved in hydrochloric acid, then precipitated by ammonia, and the recent precipitate is treated with concentrated lactic acid; the clear solution is then mixed with syrup, and flavoured with orange-flower water.

Art. 91.—*On Ergotine Injections for Varicose Veins.*

By Dr. Vogt.

(*Medical Times and Gazette*, May 11.)

Dr. Paul Vogt, Assistant-Surgeon in the Out-Patient Clinic at Griefswald, encouraged by the benefit which Langenbeck and others have derived from treating small aneurisms by hypodermic injection of the solution of ergotine, determined upon trying it in varicose veins of the lower extremity. Hitherto, as the various attempts at obtaining a radical cure of this affection by producing obliteration of the veins over a certain extent has led to evils and dangers out of proportion to the affection itself, he has confined himself to palliative treatment. He refers (*Berlin. kl. Woch.*, March 4) to a case in which an extensive varix, which had occupied the leg for years, yielded in the course of a week to two ergot injections (ext. sec. cornut. two parts, to sp. vini and glycerine of each seven parts), this being replaced by a hard, circumscribed infiltration, which eventually subsided. In various other cases as remarkable results have followed.

In explanation of the action of the ergot, Dr. Vogt believes that the following points are worthy of consideration:—1. From clinical and experimental observation the ergot injection produces contraction of the muscular coats of the vessels—chiefly of the arteries. Through the contraction of the calibre of the arteries thus produced (especially operative on those of medium calibre which are rich in smooth muscular fibre), less blood is carried into the veins, this lesser quantity being propelled with greater velocity. 2. The ergot also acts upon the muscular coat of the veins; for although this, after years of persistent dilatation, may have disappeared in many places, yet in others it is always still present. When, indeed, the varices have not been of prolonged duration, that a considerable elasticity of the walls of the veins persists is shown in puerperal women, who often, prior to delivery, have varicose veins as thick as the finger, which only a few days after that event entirely subside. 3. It is possible that some effect may be exerted by the direct compression produced on the varix by the infiltration-swelling which results.

Whether the favourable results which in all these cases have been so striking will prove definitive cannot be decided, as sufficient time has not elapsed to allow of the cure being regarded as radical. At all events, so simple and harmless a method is well worthy of further trials; and Dr. Vogt has derived good results from its employment in other forms of phlebectasis, in varicocele, hæmorrhoids, and certain forms of angioma.

Art. 92.—*On Ergot of Rye.*

By John Denham, M.D., F.R.C.S.I.

(*British Medical Journal*, May 18.)

At a meeting of the Dublin Obstetrical Society on March 16th, Dr. Denham read a paper, in which he maintained that ergot did not act as a poison on the fœtus. Physiological experiments on animals were in favour of the view that ergot was at all events not a powerful or violent poison. Again, statistics of mortality of the children in tedious and difficult labours, before the use of ergot came into fashion, agreed remarkably with those of later times of deaths when the drug was employed. Dr. Denham had come to the conclusion that, when ergot was administered between the sixth and ninth months, the life neither of mother or child was affected, and that labour was not induced by it until the full period of utero-gestation was completed. In cases of apprehended post-partum hæmorrhage, ergot—as suggested by Dr. Beatty—might be given towards the end of the second stage of labour with the happiest results. Again, when abortion had already commenced, ergot acted very beneficially. Dr. Denham concluded by drawing attention to the varied uses to which the drug in question had lately been applied.—Dr. Geo. Johnston believed that ergot did not produce a poisonous effect on either mother or child. Delivery by the forceps had largely taken the place of the use of ergot in labour.—Dr. Ringland fully agreed with Dr. Denham's views as to the non-poisonous character of ergot. He regarded it as a valuable styptic, but would not depend upon it alone as such. He used it with advantage in the third stage of labour in some cases. His experience did not bear out Dr. Denham's remarks as to its merely styptic action in the later months of pregnancy, for labour had often resulted in such cases.—Dr. Arthur Ringland had recently injected four grains of ergotine, uterine action following in four and a half minutes. Nausea and vomiting ensued.—Dr. Atthill said sores were apt to form after the operation of hypodermic injection.—Dr. Byrne thought the action of ergot might be dangerous to the child, not from any toxic effect but from mechanical causes, by inducing pressure on the funis. He quoted a case in point, where the second of twins was born livid after the use of ergot, as if it had suffered from pressure. In inertia during the second stage, and in threatened hæmorrhage during the third stage, ergot had been of use in his experience.

Art. 93.—*Guarana a Remedy for Sick Headache.*

By Samuel Wilks, M.D., F.R.C.P., Physician to Guy's Hospital.

(*British Medical Journal*, April 20.)

Dr. Wilks draws the attention of the profession to guarana as a remedy for sick-headache, and at the same time asks for the experience of those who may already have some experience with the drug. Having

had it recommended by Mr. Helmcken, of British Columbia, and Dr. Wood, of Montreal, Dr. Wilks determined to try the remedy in a systematic manner, and requested his neighbour, Mr. Hooper, the chemist, to procure him a packet of the powders. These Dr. Wilks has recommended to several patients and friends, and the result is so encouraging, that he has hastened to suggest their trial to his professional brethren. One lady speaks most enthusiastically of their power, as she has now, on two separate occasions, had her headache arrested by their use. The drug has long been known, for mention is made of it in English and French pharmacologies, but appears never to have come into general use. It consists of the seeds of a tree growing in Brazil called *Paullinia sorbilis;* and these, according to Johnstone, in his "Chemistry of Common Life," are used as we use cocoa. The seeds are ground into powder, and contain an alkaloid which is said to be identical with that found in tea and coffee. The medicine is manufactured by Grimault and Co., No. 7, Rue de la Feuillade, Paris.

Art. 94.—*On Guarana against Sick Headache.*

By A. Samelson, M.D.

(*British Medical Journal*, May 11.)

Induced by the favourable testimony of Grisolle,* Dr. Samelson prescribed the *pulvis paullinicæ sorbilis* in 1859, for a friend, who had for many years been the subject of severe hemicrania, apparently inherited from his father. The drug was obtained from one of the foremost druggists of Paris. In all, half an ounce of the powder was taken, divided in doses varying from ten to twenty grains. It proved almost entirely inefficacious. However, Grisolle himself declares the medicament only as "frequently but not always" useful. Bouchardat, in the fifth edition of his "Formulaire," published in 1854, ranks it with the astringents, and only refers to its use in dyspepsia, chronic diarrhœa, and dysentery.

Art. 95.—*On the Use of Cold Water as an Oxytocic.*

By Dr. Garvin, of Kentucky.

(*American Journal of the Medical Sciences*, October, 1871.)

The efficacy of cold water in exciting contraction of the uterus in post-partum hæmorrhage has induced Dr. Garvin to employ the same agent in promoting the action of the organ in cases of tedious labour. He gives the history of four cases selected from a number of others successfully treated by this agent. In all the cases the uterus was inactive, and presented the conditions in which ergot of rye or the use of forceps is usually recommended, but they all did well, by the application of iced water to the abdomen. Dr. Garvin compares the value of cold water with that of ergot; and while thinking that the latter drug has been over-estimated, he believes that only experience is needed to prove the efficacy of cold water, by the use of which, moreover, none

* "Pathologie Interne," 5th edition, 1852, vol. ii. p. 581.

of the dangers are encountered which often attend the use of ergot. Dr. Garvin argues that cold, when applied to the surface of the body, though locally depressing, acts as a stimulant to the whole system, as is shown by its effects in restoration from syncope, and in its stimulating influence on the brain, in cases of narcotic poisoning. It does not exert a toxical power on the nervous system as ergot does, but it merely awakens and revives the dormant and flagging energies, and re-establishes a normal condition. The only objection which can be urged against the use of cold water, as an oxytocic, is the liability of the patients to take cold under its use, but this inconvenience may be obviated by a few simple precautions. When applied to the surface in the manner recommended, cold water excites the uterus to contraction by reflex action.

Art. 96.—*Eucalyptus Globulus in Intermittent Fever.*

(*British Medical Journal*, May 11.)

About two years ago, Dr. Lorinser, of Vienna, laid before the profession the results of his observations on the treatment of ague by the *Eucalyptus Globulus*.* A supply of the tincture was placed, for the purpose of observation, at the disposal of medical men connected with the railway stations in localities where ague was frequent. The quantity, however, was but small; and a larger supply was distributed in May of last year. The results obtained during the summer have been collected and summarized by Dr. Joseph Keller, chief physician of the Austrian railway company.

The number of patients treated with tincture of eucalyptus was 432. Of these, 310 (71.76 per cent.) were perfectly cured; and 122 (28.24) required to be afterwards treated with quinine. Of the 310 patients who were cured, no paroxysm occurred after the first dose in 202; in the remaining 108, there were one or more subsequent paroxysms, which, however, yielded to repeated doses of the medicine. Quinine had been given without result in 118 of the 432 cases; 293 of the patients had had ague in previous years, and 139 were attacked for the first time in 1871. Of the 122 cases in which the eucalyptus failed, 58 recovered under the use of quinine, 38 were not cured, 10 were sent home, and 16 remained under treatment. Of the 118 cases in which quinine had been given unsuccessfully, 91 recovered under the use of eucalyptus, and in 27 no result followed.

The several types of intermittent fever were represented as follows: quotidian, complicated, 117, simple 73=190; tertian, complicated, 126, simple 95=221; quartan, complicated, 16; simple 4=20; quintan, complicated, 1. The complications were, enlargement of the spleen or liver, anæmia or chronic gastric catarrh, paludal cachexia, &c. The remedy was successful in 161 of the 260 complicated cases, or 61·9 per cent.; and in 149 (or 86·6 per cent.) of the 172 simple cases. The percentages of success in the several types were: in tertian, 75·57; in quartan, 70; in quotidian, 67·89. Among the cases in which the first dose of eucalyptus arrested the disease, were 95 complicated and

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* See *British Medical Journal*, May 21, 1870.

107 simple; 28 of the former and 20 of the latter had previously been treated unsuccessfully with quinine. In the cases where the paroxysms recurred, there were 70 complicated and 38 simple; quinine had been given without success in 27 of the former and in 15 of the latter.

Of the 432 patients, 353 were men, 46 women, and 33 children. There were 155 patients who were immigrants into the localities; and in these the disease was more frequently attended with complications, and the treatment was less successful, than among the indigenous inhabitants.

The treatment was generally commenced on the fifth day after the first paroxysm of ague; its duration averaged nine and a half days, that with quinine in previous years having been twelve and a half days.

The tincture was made by dividing into small pieces the leaves of eucalyptus obtained through France from the native country of the plant, and macerating in alcohol for three months. Ten pounds of leaves yielded twenty-five quarts of the tincture. The average dose was two drachms; and the average quantity used for each patient was seven drachms—this, however, varied much, according to the nature of the case and its complications.

Dr. Keller concludes that eucalyptus must be regarded as a very important remedy for ague; but that the plant as cultivated in Austria is less efficacious than that imported from its native soil; that the remedy is of service especially in obstinate cases of ague where quinine has been given unsuccessfully; and that the average duration of treatment by eucalyptus is shorter than that by quinine. He believes that the tincture is the most eligible preparation of the plant, as the essential oil is retained. The cost of a quart of the tincture he calculates to be less than two florins. It has a pleasant aromatic flavour. For women and children, some simple or orange syrup may be added. In the milder cases, two or three teaspoonfuls, taken before the expected paroxysm, are generally sufficient. Where cachexia is present, small doses should be taken night and morning for some time.

Art. 97.—*Eucalyptus Globulus.*

(*The Lancet*, April 20.)

Several inquiries having been made regarding the properties of a new drug obtained from the *Eucalyptus Globulus*, or Blue Gum-tree, the following information may prove interesting to our readers. The eucalyptus is a myrtaceous tree, a native of Australia, but recently cultivated in Corsica and South Europe. On account of its supposed efficacy in marsh and other fevers it has already gained the name of "Fever Tree" in Spain. Dr. Lorinser, of Vienna, reports that he employed it in the treatment of intermittent fever with success. Professor Gubler has also strongly recommended this remedy in the *Bulletin de Thérapeutique* as a tonic and stimulant. It has also been used in bronchitis, and as an antiseptic application to wounds.

The eucalyptus has been subjected to extensive trial in Corsica by Dr. Carlotti, and his very favourable report has been translated into English. From this report we learn that the whole of this giant tree is

strongly impregnated with febrifugal properties. He has used leaves, bark, and wood with success.

Professor Maclean, of Netley, has also furnished us with his experience of this drug in the October number of *The Practitioner*. Cigars made from the leaves of this plant have been employed in cases where the use of antispasmodic remedies has been indicated, and Dr. Maclean says, as the result of his experience at Netley, that he knows of no remedy, with the exception perhaps of the subcutaneous injection of morphia, so efficacious in allaying pain, calming irritation, and procuring sleep, in cases of chest aneurism involving pressure on the vagus or its branches, and in cardiac asthma, as the eucalyptus globulus. A tincture of the leaf has been used in two-drachm doses with success in Germany in the treatment of intermittent fever.

By a recommendation from the Minister of the Interior the eucalyptus was subjected to analysis by Professors Vauquelin and Leiciana. They obtained, besides an essential oil containing eucalyptol or eucalypt-camphor, an extract resembling resin of cinchona. This extract yielded a substance capable of neutralizing the strong acids, and forming crystalline salts. The sulphate crystallized in stars, like the quinine salt; this induced them to try the action of chlorine and ammonia on this substance, and the green coloration of quinine was instantly produced. It would be curious if quinine should be found in other trees than cinchonas. The oil has a lemon-yellow colour, but in other respects it strongly resembles cajeput oil. As its alkaloid and therapeutic uses resemble cinchona it has been given in similar doses.

The preparations made by Messrs. Savory and Moore are tincture, distilled water, solid extract, and fluid extract. The tincture contains its alkaloid, camphoraceous oil, &c. The distilled water is an agreeable vehicle for stimulants. The solid extract is for pills, and the fluid extract for mixtures, &c. They are all efficient modes of exhibiting the remedy. The dose of the tincture and fluid extract is a teaspoonful in water two or three times a day. The powder is given in the same doses as cinchona powder.

Art. 98.—*Camphor with Bromine as a Sedative.*

By Professor Deneffe.

(*Presse Médicale Belge*, November 19; and *Medical Times and Gazette*, December 2.)

Professor Deneffe, of Ghent, states that for more than two years he has employed a combination of camphor and bromine, which he thinks is entitled to general attention. The celebrated chemist Laurent showed that bromine will easily unite with camphor at the ordinary temperature, but that the product is slowly decomposed by exposure to the air. M. Swartz, Professor of Chemistry at Ghent, has shown that this body heated in a closed vessel is resolved into hydrobromic acid and a crystallized compound which is monobromized camphor (*camphor monobromé*), a body differing only from ordinary camphor by the substitution of an atom of bromine for an atom of hydrogen. It is a perfectly crystallized substance, fusible at 76° C., and boiling at 274°. At

Professor Swartz's request, M. Deneffe has investigated the therapeutical properties of this body, and has found it to be an excellent sedative for the nervous system. He intends shortly to publish his cases in proof of this, and, in the present communication, furnishes one of these, in which excitement of the nervous system passing into true delirium tremens was effectually relieved. He prescribed it in the form of pills, seventy grains being made into thirty pills, of which one was given every hour until twenty had been taken. For three days longer from forty-five to sixty grains were given in the twenty-four hours, the quantity being diminished from forty-five to thirty grains daily for a week longer. The recovery was progressive and stable.

Art. 99.—*Application of Iodine for Arresting the Spread of Hospital Gangrene.*

By Jon. G. Miller, M.D.

(*American Journal of the Medical Sciences*, October, 1871.)

Dr. Miller considers iodine to be one of the best, if not the very best, remedy for hospital gangrene, and this belief is founded on the following experience:—"After the battle of Atlanta, in July, 1864, I had charge of the seventeenth army corps field hospital, in which there were over one thousand wounded. The railroad being often destroyed in our rear, we were frequently for quite a number of days without the proper nourishment for the wounded. The consequence was, we had a great many cases of hospital gangrene. It was impossible to procure bromine, and we substituted for it iodine. The following is the manner in which we used it:—We took the ordinary compound tincture of iodine, and put into it as much iodine as it would dissolve, and applied it freely two or three times a day, with satisfactory results in every case."

Art. 100.—*On the Clinical Significance of the Presence of Leucin and Tyrosin.*

By James Tyson, M.D.

(*American Journal of the Medical Sciences*, January.)

Dr. James Tyson, in a paper on the clinical characteristics and physiological and pathological relations of leucin and tyrosin, after noticing the various solids and fluids of the body in which leucin is a normal or pathological constituent, observes that it is in certain affections of the liver attended by impaired function of this organ, as in acute yellow atrophy or chronic softening, that the presence of leucin assumes a clinical significance, being found under these circumstances in the blood and secretions, particularly in the urine, as well as in the substance of the liver, kidney, and spleen. Its abundant presence in the liver, under these circumstances, leads us to suppose that this organ is the seat of its destruction, rather than its formation, as some suppose; and the fact that it only, or chiefly, appears when the function of the liver is deficiently carried out, makes this supposition reasonable; while its

elimination at such times by the kidney, analogous to and coincident with the supplemental action of this organ in separating the constituents of bile, affords confirmation of the same view. The author has found leucin abundantly in the urine of a case of atrophic disease of the liver, which continued almost a year before it terminated fatally. Beale has found it in the urine in cases of chronic wasting of the liver with jaundice; but Städeler has found it in the urine in typhus and small-pox, where deficient action of the liver is not characteristic, although the action of that organ may have been deranged. Coincident with the presence of leucin and tyrosin in the urine is a great diminution in the urea. With regard to the presence of tyrosin in hepatic affections, the author quotes the observations of Neubauer and Frerichs as to its abundant presence with leucin in the urine of acute yellow atrophy of the liver. Hoppe-Seyler, however, says that it is only in certain cases of softening of the liver that it, with leucin, is abundantly present in the urine; and that, in the ordinary cases of so-called yellow atrophy, neither tyrosin nor leucin is met with in the urine. Hoppe-Seyler denies that it is found in the urine of severe typhus and variola. The author states that in two cases of destructive disease of the liver which have been under his observation, one of which, at least, was a case of true acute yellow atrophy, and both of which afforded ample opportunity for the study of leucin, he was quite unable to find any evidence of the presence of tyrosin. His experience has been confirmed by that of two other observers. He concludes that leucin and tyrosin have only a marked significance when present in the urine, in connexion with symptoms of deranged hepatic function. They are then of grave import, as indicating destructive diseases of the liver, which have, as far as is known, always terminated fatally. The mode of death, with coma or convulsions, together with the deficiency of urea in the urine containing leucin and tyrosin, points to a condition analogous to or identical with uræmic poisoning.

Art. 101.—*A Fever Mixture.*

By Horatio C. Wood, Jun., M.D., Physician to the Philadelphia Hospital.

(*New Remedies; A Quarterly Retrospect of Therapeutics*, &c.)

The value of aconite in allaying fevers is apparently not so completely recognised as it should be; and having found the following formulas very beneficial in allaying fever, and in controlling it when not dependent upon a deep-seated cause, Professor Horatio C. Wood, jun., M.D., Philadelphia, editor of *New Remedies*, publishes the following:—Take of tincture of aconite root, gtt. xxiv; sweet spirits of nitre, f℥ij; solution (or mixture) of citrate of potash, f℥iv. Mix. S. Tablespoonful every one, two, or three hours. This formula, containing two drops of the tincture of aconite root to the dose, should be given cautiously, and every hour only in urgent cases which can be carefully watched. Many women will scarcely bear it given every two hours. The following combination is more generally applicable and safer:—Take of tincture

of aconite root, gtt. xij; sweet spirit of nitre, fʒij; solution (or mixture) of citrate of potash, fʒiij. Mix. S. Tablespoonful every one or two hours.

Where there is much restlessness with the fever the following formula is recommended:—Take of tincture of aconite root, gtt. xij; sweet spirit of nitre, comp. spirit of nitre, āā fʒiss; camphor water, fʒiij; morphia sulph., gr. ss. Mix. S. Tablespoonful every one or two hours.

Art. 102.—*Suggestions as to the Use of Calabar Bean in Cholera Asiatica.*

By W. Munro, M.D., C.M., District Medical Officer, St. Kitts, W. I.

(*Edinburgh Medical Journal*, October.)

Whether the cholera poison kills by acting directly on the blood, or on the vaso-motor centres of the spinal cord through the blood, causing contraction of the small arteries and capillaries of the skin and congestion of the internal organs, there can be but little doubt, Dr. Munro thinks, unless in the minds of those whose great specific is castor-oil, that whatever counteracts the effects produced by the poison will be useful; and this, the author thinks, considering its physiological action, Calabar bean is likely to do. In Cholera Asiatica the temperature of the surface of the body is diminished, while that of the rectum, and probably of the viscera, is elevated,* the capillaries in the first case being contracted, in the other dilated, probably from some irritation of the vaso-motor centres of the spinal cord. The action of Calabar bean is to cause dilatation of the smaller arteries and capillaries, and this Dr. Fraser "is led to believe is mainly due to a specific effect on the ganglia and nerves which govern the calibre change in the vascular system;" † and "it causes paralysis of the spinal cord by a special and primary action." ‡ At first, no doubt, there is for a short time contraction of the vessels, but this is probably caused by the restriction in the heart's action.

"The Calabar bean, acting on the bodies of mammalia in a state of health, *expands the capillaries and slightly elevates the temperature of both skin and rectum;*" § and it might be advanced that the benefit conferred by its causing dilatation of the peripheral vessels in cholera would be counterbalanced by its effect on those of the intestine. As, however, the dilatation of the vessels in the intestinal mucous membrane seems to be rather the effect of the contraction of those of the skin than a primary effect of the poison, it is highly probable that if the bean restored the former to their natural calibre, as it probably would, the latter remaining to a certain extent in a state of dilatation, if they

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* See Niemeyer's "Text-Book of Practical Medicine," translation by Humphrey and Hackley, vol. ii. pp. 640, 641.

† *Vide* Fraser, in *Transactions of the Royal Society*, vol. xxiv. p. 53.

‡ Ibid., p. 20; and see also Fraser in *Edinburgh Medical Journal* for June and December, 1867.

§ Ibid., p. 54.

did so, would be of no consequence, as they would no longer be in a state of congestion, and would be better able to retain the serum of the blood, the loss of which is so serious.

Physostigma increases the secretions,* probably as an effect of the dilatation of the vessels. If the ideas given above are correct, however, it would not have this effect on the abdominal secretions in cholera.

"It seems in the first place to increase the vermicular contractions of all the abdominal viscera, and then diminish them." † This action would probably tend to lessen the purging and vomiting.

That it can act as a counter-poison to poisons having so far an action analogous to cholera, is shown by its causing dilatation of the minute blood-vessels when they have been contracted by atropia.‡ Dr. Fraser has found that it is an antidote to strychnine,§ and it has been used with success in tetanus.‖ It would therefore, it is more than probable, even were it useful in no other way, relieve, perhaps even remove the frightful cramps of cholera, the pain of which, by its depressing influence on the system, assists so materially in destroying the patient.

As to *when* the bean ought to be used: This, Dr. Munro thinks, could be best judged of by the medical man, according to circumstances; but, as far as he thinks at present, he would be inclined to use it whenever it was found that the premonitory diarrhœa was not stopped by ordinary remedies, and that the external temperature was lower than normal by the thermometer.

As to *how* to use it: Dr. Munro would give it by subcutaneous injection. In Dr. Macarthur's case mentioned above, it was so given, and no bad results followed; but even were some local inflammation to be set up, if the patient recovered through its use, that would not much matter. Dr. Munro would inject in the dorsal region of the back, beginning with $\frac{1}{8}$ gr. of the extract, repeated every two hours, and increase the dose if required. The author would by no means trust to Calabar bean alone, but would use such rational means (as, injections of salt and water, sinapisms, and heat applied externally) as have been found of benefit.

Art. 103.—*On some of the most Important Remedies used in Brain Disease.*

By William Hammond, M.D., Professor of Diseases of the Mind and Nervous System in the Bellevue Hospital Medical College, New York.

("A Treatise on Diseases of the Nervous System," 1871. 8vo, pp. 754.)

The following observations on some of the most important remedies used in brain disease will be found deserving of attention:—

"Bromide of potassium can almost always be used with advantage to

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* *Vide* Fraser, in *Transactions of the Royal Society*, vol. xxiv. p. 73.

† Ibid., p 57. ‡ Ibid., p. 67. § Page 26, Exp. xliii.

‖ See, for instance, Dr. Macarthur, in *Edinburgh Medical Journal*, May, 1867.

diminish the amount of blood in the brain, and to allay any excitement of the nervous system that may be present in the sthenic form of insomnia. That the first-named of these effects follows its use, I have recently ascertained by experiments upon living animals, the details of which will be given hereafter. Suffice it now to say that I have administered it to dogs whose brains have been exposed to view by trephining the skull, and that I have invariably found it to lessen the quantity of blood circulating within the cranium, and to produce a shrinking of the brain from this cause. Moreover, we have only to observe its effects upon the human subject, to be convinced that this is one of the most important results of its employment. The flushed face, the throbbing of the carotids and temporals, the suffusion of the eyes, the feeling of fulness in the head, all disappear as if by magic under its use. It may be given in doses of from ten to thirty grains, the latter quantity being seldom required, but may be taken with perfect safety in severe cases.

"Since then, experiments with the cephalo-hæmometer and ophthalmoscope have abundantly confirmed these views, and more extensive experience in the treatment of cerebral congestion has placed the matter beyond the possibility of a doubt. Other observers have also confirmed the opinions here expressed.

"The prescription which I usually employ consists of bromide of potassium, ʒj; water, ʒiv; of this a teaspoonful is taken three times a day in a little water. Occasionally the bromide is increased to ʒiss, and sometimes a saturated solution—which contains grs. xxx. to ʒj—is used. I continue the medicine till drowsiness, a slight feeling of weakness in the legs, and contraction of the blood-vessels of the retina—detected by the ophthalmoscope—are produced. The more prominent head-symptoms generally disappear in four or five days, and the results above-mentioned ensue in about ten days.

"Latterly I have used the bromide of sodium in corresponding doses instead of the bromide of potassium. It is more pleasant to the taste, and does not cause so much constitutional disturbance as sometimes follows the administration of the bromide of potassium in large doses.

"In conjunction with one or other of the bromides mentioned, I very generally employ the oxide of zinc, which experience has taught me is a powerful agent in relieving cerebral congestion, and giving tone to the nervous system. It should be given in doses of grs. ij, three times a day, either in the form of a pill or a powder, and to avoid any nausea should be taken after meals. At the end of about ten days it will generally be found that all symptoms of congestion—subjective and objective—have disappeared, leaving a little debility and mental depression. It then becomes expedient to give tonics and restoratives, and those which have a special action on the nervous system are to be preferred. Among them, strychnia, phosphorus, and cod-liver oil, stand first.

"Strychnia may be advantageously administered in conjunction with iron and quinine dissolved in dilute phosphoric acid, as in the following formula:—Strychniæ sul., gr. j; ferri pyrophosphatis, quiniæ sul., āā ʒj; acid. phosp. dil., zingiberis syrupi, āā ʒij. M. ft. mist. Dose, a teaspoonful three times a day in a little water. I prefer this extempo-

raneous prescription to any of the syrups or elixirs with like ingredients. If for any reason the iron and quinine are not indicated, the strychnia can be given alone with the dilute phosphoric acid.

"Phosphorus almost always acts well in such cases as those under consideration. It may be given in the form of the phosphorated oil, as in the following formula:—℞ Olei phosphorat., ℥ss; mucil. acaciæ ℥j; olei bergami, gtt. xl. M. ft. emulsio. Dose, gtt. xv three times a day. A very elegant preparation of phosphorus is the phosphide of zinc. . . . . My experience with this medicine has been very extensive. I have never known it to produce the least unpleasant effect, and have rarely been disappointed in obtaining the full results to be expected from phosphorus in corresponding doses. I am therefore not in accord with Dr. M. Clymer on this point.

"The chemical formula of the phosphide of zinc is $P\,Zn_3$, and consequently a grain represents a little more than one-seventh of a grain of phosphorus. The proper dose, therefore, is about the tenth of a grain. I usually prescribe it in cerebral congestion, according to the following prescription:—℞ Zinci phosphidi, gr. iij; rosar. conserv., q. s. M. ft. in pil no. xxx. Dose, one three times a day. Instead of the conserve of roses, gr. x of the extract of nux-vomica may be substituted if strychnia is not being administered in some other form."

Art. 104.—*On some Cautions to be observed in the Use of Calomel Vapour Baths.**

By Henry Lee, F.R.C.S.

(*The Lancet*, Feb. 17.)

Mr. Lee was the first to introduce calomel baths to the notice of the profession, and before doing so had laboured to find out the cause of failure of the cinnabar and grey oxide of mercury. The cinnabar was decomposed by heat, and gave off sulphurous acid, which irritated the lungs. The grey oxide was decomposed, and absorbing oxygen, became the binoxide, and acted more powerfully. Calomel, when used with water as he recommended, was, he thought, perfect; the skin was acted upon, and the lungs were not irritated. During the fumigation of dry calomel, hydrochloric acid was given off, which was very irritating to the lungs, but no bad results followed if water were used as well. In the case of a young woman in good health and well nourished, who was suffering from a syphilitic ulcer of the throat, twenty grains of calomel were volatilized in a teapot, and inhaled. The skin became cold and livid, the lips blue, and the pulse small. On a post-mortem (for the woman died), the lungs were emphysematous, and there was effusion into them. The other organs were healthy, and the fumigation, no doubt, caused the death; but if a little vapour of water had been present no harm would have happened. In another case, a man inhaled thirty grains of calomel from a teapot for four nights, for the cure of a hoarseness which had lasted two years, and which had resisted a great variety of treat-

* Read at a Meeting of the Medical Society of London, January 29.

ment. The hoarseness was cured without salivation, but the man has suffered ever since from a cough and a pain in the chest. The lungs are not diseased, and no tubercle is present. With regard to the bath, Mr. Lee had not seen bad results, except from pre-existing disease. He does not salivate, but gets a slight tenderness of the gums.

Art. 105.—*On Turpentine in Peritonitis.*

By M. Vidal.

(*Medical Times and Gazette*, February 24.)

At a recent meeting of the Paris Hospital Medical Soeiety, M. Vidal took occasion to call the attention of his colleagues to the great value of turpentine as an external application in partial and general, and even in puerperal peritonitis. Trousseau, originally importing this remedy from England, employed it in large doses internally. In peritonitis, M. Vidal soaks a piece of flannel thoroughly in the turpentine, and having applied it over a large portion of the abdomen, covers it with gummed silk. It remains on until vesication is produced at several points, when the silk is removed in order to allow of the evaporation of the turpentine. Under this application he has in many instances seen patients, who were very far gone, rally completely and recover.—M. Bourdon inquired whether this application of turpentine had been employed in any cases from the commencement, and whether leeches, cataplasms, &c., had been also resorted to. In this case the turpentine would have acted just like an ordinary blister, and it is well known that in advanced peritonitis advantage is sometimes derived from resorting to blisters and Todd's mixture. He also suggested that the turpentine might act in the same way as the castor-oil collodion employed by M. R. Latour, by preventing transpiration and the contact of air.—M. Vidal believes, however, that turpentine does not act in this way, but as an energetic and diffused revulsive, while at the same time it undergoes absorption by the skin and respiratory organs. At first he did not employ it so exclusively in peritonitis as he now does, as he then used to apply also leeches. Now he resorts without hesitation to the turpentine at once. He generally combines with it the application of ice, or what might be termed compression by means of ice, and under certain circumstances he would still use leeches.—M. Moutard-Martin, believing the action of the turpentine to be solely topical, asked whether comparative trials of it and of blisters had been made; but M. Vidal is convinced that it also acts internally. That it is speedily absorbed is shown by the odour of the urine; while, soon after its application, the patients seem as if a cordial had been administered to them, and their cyanosed lips soon recover their colour.

Art. 106.—*Mechanical Restraint in Cases of Insanity.*

By David Yellowlees, M.D., Medical Superintendent of the Glamorganshire County Asylum.

(*The Lancet*, May 18.)

In a letter to the Editor of *The Lancet*, Dr. Yellowlees states that he never hesitates to use restraint when other means fail, if he thinks it for the patient's good. The cases requiring it are very rare, but it is as certainly right to use it when required as it is wrong to use it when unnecessary. To condemn restraint under all circumstances, merely because it has been, or might yet be, abused, is as unreasonable as to forbid all use of stimulants because they have been, or may yet be, used too freely.

Dr. Yellowlees knows there are some who utterly condemn restraint and everything that resembles it, under all possible circumstances, and who avow that they would *never* use it, even if they thought it advisable in any individual case. He thinks this a false position, founded on an erroneous and unworthy view of the system which it professes to uphold.

The noble revolution which Dr. Conolly was chiefly instrumental in effecting did not consist merely in the removal of leg-locks and strait waistcoats; it consisted in the introduction of totally new ideas as to the insane, and a totally new method of dealing with them—in the substitution of kindness, sympathy, and skilful treatment for harshness, severity, and neglect, and in making the welfare of the patient the constant and paramount aim. This, of course, implied the abolition of all personal restraint to the utmost possible extent consistent with his welfare, *but no further*. So long as personal freedom is the best thing for the patient it is *right*, when it is not the best thing for the patient it is *wrong*. There is a mistaken tendency to regard "non-restraint" as something in itself of mysterious virtue and vital importance, as a kind of sacred rule never, under any circumstances, to be violated; its only true ground and its absolute limit is the good of the individual patient.

The indiscriminate use of restraint or seclusion cannot be too strongly condemned, but to abjure them under all circumstances is only another illustration of the proverb that the extreme of right is wrong. The undue use of "chemical restraint," or other means of repression, would be an evil substitute for their occasional use; and to demand from attendants vigilance that shall never flag, and patience that shall never tire, is to expect more than man can render.

In conclusion, Dr. Yellowlees says the above views are not at all singular, as the Editor of *The Lancet* seems to think; but are held by many of our best asylum superintendents.

Art. 107.—*On the Use of a Hemp Saw for the Excision of Polypi.*

By Alfred McClintock, M.D.

(*Medical Press and Circular*, March 13.)

At a meeting of the Dublin Obstetrical Society on February 17th, Dr. McClintock read a paper on the use of a hemp saw for the excision of polypi. He said he had had but a very limited experience of this method of excising vaginal and uterine tumours, but he thought it would prove very simple and useful, and in many cases more feasible than other modes of operation. His attention was first directed to the matter by the paper read by the President on the subject of decapitation in utero, by sawing the neck through with a hempen cord. It occurred to him that the same method might be applied for the extirpation of uterine polypi; and he determined to use it on the first opportunity that presented itself. Recently Dr. Symes, of Kingstown, sent to him a married lady who had borne four children, and who was suffering from repeated hæmorrhages from the vagina. A large polypus was discovered in the vagina, and on the 10th of last month he met Dr. Symes for the purpose of extirpating it. The polypus was the size of a turkey's egg, the neck of it being about as thick as a man's thumb. Dr. McClintock then described the operation. The polypus having been drawn down to the vulva, a loop of fishing-line, introduced through Gooch's double canula, was cast round the neck of it, and in thirty-five seconds by the sawing process it cut through the neck of the growth, which was then removed by the vulsellum. The tumour weighed two and a half ounces, and the section of the pedicle was one inch in diameter; it was a true polypus, presenting a well-marked capsule. The operation was facile, expeditious, and unattended with pain or bleeding. No doubt the polypus was of a kind that admitted of removal by means of the scissors or écraseur, so that it presented no unusual difficulties. The ligature was applied and used through Gooch's double canula to protec the vagina from injury by friction of the ligature. He had seen the wire rope break in attempting to remove fibrous tumours, thus causing great inconvenience. The hemp ligature might also give way, but they could guard against that occurrence by employing a long piece of cord, and from time to time bringing a fresh portion to act upon the surface they were operating on. Dr. McClintock then mentioned the results of several experiments which he had made to test the efficacy of the cord. In ten minutes he cut through the tendon in the hock of an ox, which he did not think the écraseur could be capable of doing. He admitted that it was possible that this method of operation might be followed by hæmorrhage or pyæmia, but this was a matter which experience alone could determine.

Art. 108.—*On Condurango in Cancer.*

By J. W. Hulke, F.R.S., and Campbell De Morgan, F.R.S.

(*Medical Times and Gazette*, February 4.)

At a meeting of the Clinical Society on February 9th, Mr. J. W.

Hulke read a paper on "Cases of Cancer treated with Condurango" in the Middlesex Hospital. The author and his colleague, Mr. Campbell De Morgan, were enabled by the present of a parcel of condurango bark by an American surgeon to begin in November last, a second trial of this reputed remedy for cancer. When this supply ran short, the trial was continued with bark bought of Messrs. John Bell and Co., and with a fluid extract very liberally placed at the author's disposal by its makers, Messrs. Bliss, Keine, and Co., of New York. After briefly noticing its natural history, and the physiological and therapeutic properties assigned to the condurango, the author proceeded to relate two cases of ulcerated hard cancer of the female breast, and one of rodent cancer of the face, in both of which the exhibition of the reputed remedy failed to modify favourably, or to retard the progress of the disease. The result of this trial confirmed the author's first one, made in August and September last, which showed that, as a remedy for cancer, condurango was absolutely inert.

Mr. De Morgan also read a paper containing a report of three cases treated at the Middlesex Hospital, showing the uselessness of condurango; and he mentioned others which had come to his notice, tending to prove the same thing. He considered it very important that the fact should be widely made known that this and other so-called remedies for cancer had really no effect on the disease, as statements of wonderful cures were inducing the public to put faith in them, and to waste time and money in their trial. Of the cases on which he had tried the medicine, two were advanced cancers of the breast, and one was uterine. The patients were suffering generally from the effects of the disease, and were considered fit cases on which to try the experiment. The medicine was given regularly and carefully in the manner directed. In no one instance was there the slightest improvement in the conditions of the local disease, which advanced at the same rate as before; neither was there any diminution of pain or discharge, or any change for the better in the characters of the ulcerations. There was not, moreover, any general improvement. For a day or two they thought they had a better appetite, but this was the mere transient change one always sees in cancer patients. None of the changes which were said to take plac in the conditions of the urine or the perspiration had been observed. Mr. De Morgan's impression was that the downward progress of these patients had not been arrested for one instant by the agency of the drug.

Art. 109.—*On the Internal Use of Carbolic Acid.*

By James Allan, M.B., L.R.C.S.E., Newmilns, Ayrshire.

(*British Medical Journal*, February 10.)

In this paper Dr. Allan points out shortly diseases in which he believes, from the results he has obtained, carbolic acid may be used with success. In the treatment of mucous tubercles and primary syphilitic sores, he has met with a considerable amount of success.

The method of using it is by applying a solution of equal parts of carbolic acid and water once daily, and by the constant application of a lotion of eight grains of carbolic acid to the ounce of water. If the acid be applied in a concentrated form, it causes the sore to assume a whitish appearance, after which a thin yellow scab forms, which separates in three or four days. In all cases the pain was inconsiderable, and the destruction of the sores rapid. According to the trials in which Dr. Allan has employed carbolic acid in the treatment of syphilis, he is unable to form a definite opinion as to its merits or defects. In two cases which resisted all the usual remedial means it was prescribed, and in a few weeks all the symptoms had disappeared. The effects have also been investigated by Dr. Köhn in Hebra's wards, in whose experience the beneficial results were not so well marked as to recommend its administration.

Dr. Allan agrees with many observers as to the beneficial effects of carbolic acid in the fermentative class of dyspeptic cases, in which there is flatulence with evolution of gas, with a tendency to vomit. For this it can be administered either in solution in grain-doses or in the form of a pill. Thus given it stimulates the stomach, checks the fermentative process, and produces an evolution of gas and evacuation of flatus. In hæmorrhagic ulcer of the stomach, a few administrations of grain-doses, freely diluted, are very efficacious in checking the bleeding, provided, as in all cases, due attention has been paid to the diet. Good results have also been obtained in cases of chronic gastric catarrh, especially if some stomachic sedative be first given. It should be given upon an empty stomach, in quarter to half-grain doses much diluted.

In considering the different processes which take place during the decomposition of the pulmonary tissue in phthisis, on account of the deteriorated state of vitality, it would seem that, if an antiseptic could be introduced by any means which would not derange the general functions, the disease might be arrested. From a careful review of the cases recorded in the periodical literature, as well as from the results of practice which Dr. Allan has himself seen, he is certain that when pulmonary disorganization has taken place, carbolic acid has no effect to eradicate it. In the treatment of certain skin diseases, Dr. Allan believes carbolic acid to be of much use, especially in those of an obstinate nature. Good results have been obtained in psoriasis, pityriasis, and prurigo. It should be administered in the form of pills, each containing one grain, and from six to nine of these given daily, and gradually increased. In gangrene of the lungs it removes the fœtid odour, and seemingly produces good. In chronic bronchitis and oozing hæmorrhages of the air-passages it is useful; so, also, in mucous diarrhœa of the large bowel, in the form of an injection, when preceded by some alkaline solution.

Art. 110.—*Bromide of Sodium.*

By Meredith Clymer, M.D.

(*The Medical World*, October, 1871.)

Whatever may be the real therapeutic value of the bromide of potassium in the treatment of epilepsy and other disorders of the nervous system, it has come to be generally acknowledged that its prolonged use is often attended with serious inconveniences, and even dangers, as dulness of the mental faculties, loss of memory, great muscular feebleness of the lower extremities, &c. Dr. Clymer has heard many epileptics declare that they would rather suffer from their fits than from the condition brought on by the doses of bromide of potassium necessary to suspend their attacks, or lessen the number of them. It is, therefore, a matter of some moment to those who treat nervous disorders to find a remedy of that efficacy so largely claimed for the bromide of potassium in some affections.

There is reason to believe that in the *bromide of sodium* a happy substitute has been found that will fully meet every indication for which the bromide of potassium has been given, while it is much better tolerated by the system, and free from the objections which are justly urged against the latter. For some time past, Dr. Clymer has habitually used the bromide of sodium in all disorders of the nervous system where before he prescribed the bromide of potassium, and, so far as his own experience goes, speaks positively to this point. He has given it in a number of cases of epilepsy continuously for months without any of the unpleasant symptoms which so constantly follow the prolonged administration of the potassium salt, excepting the eruption, and with the best results in mitigating or suspending the paroxysms. Dr. Decaisne has given the bromide of sodium for a year without its producing the systemic saturation so frequent during the long and continuous exhibition of the bromide of potassium. According to Nimias, of Venice, this latter salt accumulates in the various organs, the brain, spinal cord, lungs, liver, &c., and is neither readily eliminated nor assimilated. Soda is the alkali found throughout the body, and in all the secretions, and would naturally be more readily absorbed and appropriated than the potassic salt. Another point in favour of the use of the sodic rather than the potassic salt, and which has not yet been mentioned, is the fact of the depressing influence of the salts of potash on the heart when they are largely or long given. No such effects are alleged to follow the continuous use of the salts of soda.

The taste of the bromide of sodium is much less unpleasant than that of the bromide of potassium, being very like common salt, and it may be used to replace the latter, mixed with the food, as with bread and butter, eggs, in milk, &c. Hence it is of more easy administration than the bromide of potassium, to the taste of which some persons have invincible repugnance, and increasing with its use.

It is of the first importance that bromide of sodium should be perfectly free of all impurities, particularly of iodine. Larger doses of the hydrated salt are required than of the anhydrous, for it crystallizes with

four equivalents of water. According to Dr. Morin (*Comptes Rendus* of the Académie des Sciences, January and April, 1870), anhydrous bromide of sodium contains 11 per cent. more bromide than bromide of potassium. Dr. Morin and Balard, the discoverer of this salt (1826), give the following table of the approximative amount of bromide in the corresponding quantities of bromide of sodium and bromide of potassium:—

Bromine. Grammes.	Bromide of Sodium. Grammes.	Bromide of Potassium. Grammes.
3·33	4·33	5·00
6·66	8·66	10·00
10·00	13·00	15·00
13·63	17·33	20·00
16·06	21·66	25·00
12·00	26·00	30·00

The doses of bromide of sodium are about the same as those of bromide of potassium. In epilepsy, Dr. Clymer usually gives 20 grains three times daily, and has rarely gone above that amount. It sometimes seems to cause or encourage constipation.

Art. 111.—*On Bromide of Calcium.*

By William A. Hammond, M.D.

(*New York Medical Journal*, December, 1871.)

Dr. Hammond states that during the last few months he has used this article in a number of cases in which the bromides were indicated, and is satisfied of its great efficacy.

"The dose," he says, "is from fifteen to thirty grains or more for an adult. It is especially useful in those cases in which speedy action is desirable, as, owing to its instability, the bromide is readily set free, and its peculiar action on the organism obtained more promptly than when either of the other bromides is administered. Chief among these effects is its hypnotic influence, and hence the bromide of calcium is particularly beneficial in cases of delirium tremens, or in the insomnia resulting from intense mental labour or excitement.

"Thus, I gave a gentleman, who, owing to business anxieties, had not slept for several nights, and who was in a state of great excitement, a single dose of thirty grains. He soon fell into a sound sleep, which lasted for seven hours. The next night, as he was wakeful, I gave him a like dose of bromide of potassium, but it was without effect, and he remained awake the whole night. The subsequent night he was as indisposed to sleep as he ever had been, but a dose of thirty grains of bromide of calcium gave him eight hours' sound sleep, and he awoke refreshed and with all unpleasant cerebral symptoms—pain, vertigo, and confusion of ideas—entirely gone.

"In a number of other instances a single dose has sufficed to induce sleep—a result which very rarely follows the administration of one dose of any of the other bromides.

"In those exhausted conditions of the nervous system attended with great irritability, such as are frequently met with in hysterical women, and which are indicated by headache, vertigo, insomnia, and a mental condition of extreme excitement, bromide of calcium has proved in my hands of decided service. Combined with the syrup of the lacto-phosphate of lime, it scarcely leaves anything to be desired. An eligible formula is—℞ Calcii bromidi, ʒj; syrup. lact. phos. cal., ʒiv. M. ft sol. Dose, a teaspoonful three times a day in a little water.

"In epilepsy I have thus far seen no reason for preferring it to the bromide of potassium or sodium, except in those cases in which the paroxysms are very frequent, or in cases occurring in very young infants; of these latter, several which had previously resisted the bromide of potassium, have yielded to the bromide of calcium. It does not appear to cause acne to anything like the extent of the bromide of potassium or of sodium."

Art. 112.—*Some of the Ill-Effects of Bromide of Potassium.*

By T. O. Wood, M.D., Medical Superintendent of Dunston Lodge Asylum.

(*British Medical Journal*, October 14, 1871.)

The author states that bromide of potassium, "when given continuously and in large doses, produces a great variety of results, depending generally upon the constitution and bodily condition of the patient at the time of its administration. Its most dangerous effect is when, after a course of comparatively small doses which do not seem to be taking any great hold upon the system generally, or upon the mental symptoms to control which it is given, it *suddenly*, and without apparent cause or warning, displays its cumulative effect, and rapidly reduces the patient to a condition of great bodily prostration, and completely alters the character of the mental symptoms. This physical prostration is at once evident. There are great muscular debility; dimness of sight, with dilated pupils; irregular gait, the patient reeling as though intoxicated; whilst nausea, vomiting, or purgation, with abdominal pain of a dull aching character, may also be present; the breath having a disagreeable odour, which seems peculiar to those who have been for any length of time under the influence of the bromide. Its effect upon the mental symptoms is no less marked. The patient who has been violently excited, glorying in his imaginary power of body and mind, becomes desponding, sullen, melancholic, and frequently lachrymose, often even despairing. One patient, who was discharged from this asylum 'recovered,' has since told me that he knew and felt for some time afterwards the effect of the medicine upon his mind. It produced a feeling of despondency which at times quite overcame him."

Having read Dr. Clouston's admirable paper on the combination of tincture of cannabis indica with the bromide, Dr. Wood resolved to give it a trial. Dr. Clouston says, "Cannabis indica being a diuretic,

and the bromide of potassium being carried off by the kidneys, it is probable that the former in that way helps to prevent the cumulative action of the latter when given alone."

Dr. Wood tried this combination in two cases, and with very satisfactory results. In one case the bromide was pushed to a drachm and a half, with the same quantity of tincture of cannabis indica, and eventually up to two drachms of each drug thrice daily, with the effect of producing "a state of drowsy calmness of the nervous system," and without, in this instance, producing any symptoms of dyspepsia, of physical exhaustion, or of threatened syncope; and thus, as far as these cases go, proving the utility of the combination.

Art. 113.—*Quinine.*

(*Medical Times and Gazette*, February 3.)

Our knowledge of the physiological and therapeutical actions of this invaluable alkaloid have been recently much extended by the labours of Binz, Ranke, Kerner, Zuntz, Scharrenbroich, and Schulte. We propose to lay before our readers a *résumé* of the chief results obtained.

Binz finds that quinine has the power of arresting the processes of putrefaction and fermentation in a high degree, and that it is an active poison for all low organisms, animal and vegetable. According to Cohnheim's views, pus, being mainly a collection of white blood-globules, which have passed through the walls of the vessels—further, quinine having the power of arresting the motions of the white corpuscles, and hence preventing their exit from the vessels—the alkaloid arrests, or at all events diminishes, the formation of pus during the course of inflammation. Moreover, it destroys the ozonizing power of certain substances; and as the red corpuscles have this power, quinine in the blood probably diminishes oxidation of tissue, and lessens the production of heat. Ranke and Kerner, indeed, have found that quinine in large doses diminishes tissue changes, as is shown by the smaller quantities of urea and uric acid excreted; and there are many observations to show that in fevers it produces a decrement in temperature. Ranke and Kerner's experiments do not show, however, how far the lessening of tissue-waste is due to the direct action of quinine on oxidation, and how far to the indirect action of the alkaloid through the nervous system. Two methods have been employed for ascertaining the direct influence of quinine on oxidation. Harley added quinine to the blood, and found that this, when so treated, took up less oxygen, and gave off less carbonic acid, than blood which had not been so treated. This method is inconvenient of application, and liable to error. Zuntz employed the changes in the alkalinity of the blood for arriving at the same results. Schulte has extended these researches. If fresh blood be drawn, a development of acid begins in it, and continues, at first rapidly, then more slowly, till putrefaction sets in. Of course this acidification depends on oxidation; and the diminished alkalinity of the blood, thereby produced, furnishes a test of the rapidity with which oxidation proceeds. Schulte has confirmed the observation first made by Zuntz and Schar-

renbroich, that quinine and berberine lessen the production of acid. Harley's observation is thus confirmed. Cinchonine produces similar results to quinine, though in a very inferior degree. Picrate of sodium is nearly as powerful as quinine. Zuntz found, as Ranke and Kerner had previously done, that quinine, in ten-grain doses, lessens the daily excretion of urea by one-third or more. Unruh has found the same to occur when quinine is administered in fevers; but his observations are open to objection. Binz's experiments are curious, and show that when putrefying liquids are injected into the circulation the temperature of the body rises; but if the fluids be previously mixed with quinine, whereby the putrefactive processes are arrested or destroyed, the rise in temperature is either entirely arrested or considerably diminished.

We think that these experiments have an important bearing on practice, and that they are in accordance with the teachings of clinical observation. It has been too much the fashion to assume that the therapeutical actions of quinine are entirely different from its effects when administered in health. We apprehend that the true method of commencing the study of the actions of medicines is first to ascertain their effects in health; then to observe their results in disease.

Dr. Crace Calvert has also recently announced the discovery of the power of quinine in preventing the development of fungi. He appears, however, to have been unaware of Binz's previous publication of the fact.

Art. 114.—*On the Various Bad Symptoms Observed after the Administration of Quinine in Large Doses.*

By Dr. C. Binz.

(*Lyon Médical*, Fevrier, 1872; *Gazette Hebdomadaire*, No. 8, 1872.)

The author, who has himself helped very much in the employment of quinine in medicine, has collected a number of cases showing the disadvantages that may attend the use of this therapeutical agent. The greater number of the cases which he brings forward show that the dangers of quinine in large doses do not present a very formidable character, and ought scarcely to be considered in the presence of the dangerous symptoms of obstinate fever of an inflammatory or putrid character. It is, however, useful to be able to recognise them.

Disturbances of the nervous system and of hearing following the employment of too powerful doses of quinine are mentioned as having occurred in a great number of cases, but in these the preparation was often faulty. A case published by Giacomini proves that with so large a dose as ten grammes the prostration, vertigo, and loss of hearing and sight may rapidly disappear. Still it ought not to be forgotten that quinine is a cardiac poison, that in strong doses it may weaken the pulse and the arterial tension; this fact it is important to know in the treatment of affections in which it is necessary to raise the cardiac activity; such are cases of croupal pneumonia. The author quotes one case in which the administration of one and a half gramme of quinine

in a patient suffering from croupal pneumonia increased the cyanosis and dyspnoea.

The auditory disturbances have generally but a limited duration. Maillot, who has treated more than 6000 patients by sulphate of quinine in large doses, declares that he has constantly observed the deafness to disappear in the course of a few days. He mentions, however, the case of an officer who, after taking quinine three times, in doses of six grammes, for a dangerous fever, remained completely deaf.

Many observers attribute to the use of quinine disturbance of speech carried even to mutism and persistent hoarseness. Briquet has observed four instances of incomplete and temporary amaurosis, and Graefe has published two cases of amaurosis following the use of quinine, in which no local change could be observed on ophthalmoscopic examination. In one of these latter cases the vision was restored.

Pulmonary hæmorrhages and hæmorrhagic purpura have been frequently observed after the administration of quinine.

With regard to the intestinal canal, which is one of the most sensitive organs to the irritating action of quinine in large doses, one ought to be on his guard against the introduction into the stomachs of fever patients of preparations of quinine which are soluble with difficulty. It has been demonstrated by M. Manassein that it is not the pepsine that fails in the gastric juice of feverish animals, but rather the free acids. It is scarcely possible that it can be otherwise in man. The instinctive desire manifested by the patients for acid drinks is a proof of this. The salts of quinine in a feebly acid solution are generally easily absorbed; they may, when they are not altered, be administered for several weeks without causing any inconvenience. When administered, on the other hand, in the form of powder and pills, the quinine, particularly the sulphate, is not very soluble, and excites in the stomach and intestinal canal the well-known symptoms of irritation with all its consequences. Morbid changes in those organs consecutive to the ingestion of quinine may be attributed then, in ordinary circumstances, to the faulty mode of administration made use of by the physician.

The kidneys and urinary passages are not indifferent to the influence of quinine. Briquet has observed quinine which was in great part eliminated by the urine, excite albuminuria and vesical catarrh; but in these cases the dose was very high, as much as four grammes; on the other hand, quinine in doses of one or two grammes may exercise favourable influence on cystitis.

Art. 115.—*Koumiss in the Treatment of Phthisis.*

By Victor Jagielski, M.D.

(*British Medical Journal*, February 3.)

In Tartary, koumiss has been specially favoured as a beverage from time immemorial, through the influence of religious observances; for, not being a distilled liquor, it escapes the Mohammedan proscription,

"Qui Muhammedi doctrinam sequuntur, lege Corano præscriptâ vinum adustum sumere vitantur," says one of the authors on that country. This ban gives that country prohibition against mania potatoria and delirium tremens, which, as well as phthisis, are amongst the unknown indigenous diseases in Tartary.

Dr. Jagielski does not, in this paper, discuss the physiological properties of koumiss, having already described them in his several publications on the subject. What he wishes to impress is:—

1. That the climate itself of Tartary does not give immunity from phthisis, and hence mere residence there would fail to benefit consumptive patients.

2. That the exemption of Tartary, Iceland, and Shetland from phthisis is not a mere coincidence, but arises from one and the same cause, which is common to all three of those countries—viz., the general use of koumiss by the inhabitants.

3. That koumiss alone in Tartary prevents and arrests all those morbid conditions of the body which are the usual precursors of consumption.

4. That the most favoured spot in these British islands for a consumptive patient is his or her own comfortable home, since koumiss can be brought there to work out its marvellous curative power, and thus justify the tribute which Dr. Ucke and others pay to its virtues in styling it "a most excellent, if not the best, remedy for phthisis, both on account of its nourishing properties and healing effects upon the mucous membranes."

Art. 116.—*Xylol, the New Remedy for Small-Pox.*

By C. R. C. Tichborne, F.C.S., M.R.I.A.

(*Medical Press and Circular*, February 28.)

Xylol, xylene, or ethyl-benzine as it has been respectively called, is one of a homologous series of hydrocarbons, of which the well-known benzine and toluene form the two first. These hydrocarbons are all formed from coal-tar naphtha. Xylol was first procured by Hugo Müller, but its nitro-compound had previously been discovered by Warren de la Rue in 1856. Coal-tar naphtha is submitted to fractional distillation until the part which boils at 141° is separated, this is submitted to the action of fuming sulphuric acid, which dissolves the xylol and leaves the other hydrocarbons. The xylol is then separated by distillation from this mixture.

Xylol is said to have been used by Dr. Zuelzer, the Senior Physician at the Charité Hospital at Berlin, with great success in cases of small-pox. The theory of its action would appear to be that xylol is taken up by the blood, and acts as a disinfectant. The vapour seems to the writer to possess faint, and not very well marked, anæsthetic properties —this may be due to the presence of a small quantity of benzol, or the other hydrocarbons. The antiseptic properties of this group of compounds are well known, and thus probably the specific action of

this one. The boiling point is variously stated at 139° to 140°. The specimens examined by the writer, generally commenced to boil at about 135° C. The specific gravity was ·866.

It is said that the purity of xylol is of importance, but unfortunately there is no very ready method by which the ordinary practitioner might detect its purity. It should be soluble in fuming sulphuric acid, but it is not soluble in the ordinary sulphuric acid of the Pharmacopœia.

It has a faint odour, something like benzol, and an aromatic taste. The dose is three to five drops for children; ten to fifteen drops for adults every hour to every three hours. It it is quite harmless in reasonable doses. In Berlin it is given in capsules. As it is very insoluble the best method of giving it would be in an emulsion of almonds. When once assimilated it is rapidly oxidized in the body, this fact being demonstrated by the production of a peculiar odour in the urine, which, however, is quite distinct from xylol itself.

Art. 117.—*A Means of Arresting the Spread of Small-Pox.*

By John Day, M.D.

(*Australian Medical Journal.*)

Dr. Day, in a paper "On a Means of Arresting the Spread of Small-Pox," read at a meeting of the Medical Society of Victoria, explained his *modus operandi* of perfectly destroying the germs by which small-pox is propagated. His belief is, that the virus of small-pox is always associated with pus-cells, and the only way in which it can be destroyed is by oxidation. He proposes the use of peroxide of hydrogen as the agent for rapidly and thoroughly oxidizing and destroying the virus-germs given off from the bodies of small-pox patients. Peroxide of hydrogen, which, according to Schönbein, is composed of antozone and water in a state of chemical combination, undergoes a remarkable change in the presence of blood, and by mere contact with the corpuscles, its antozone is rapidly transformed into ozone—the oxygen of combination.

The particular form in which he would recommend the use of peroxide of hydrogen is that known as ozone ether—being a compound of absolute ether and peroxide of hydrogen. It is highly volatile, and may be diffused even through very large apartments, such as the wards of hospitals, by means of a spray-apparatus. It quickly destroys sulphuretted hydrogen and other noxious gases, and when once diffused it is very persistent in its action.

As collodion, cold cream, and lard are occasionally used as topical applications in the treatment of small-pox, he mentions that ozonic ether can be mixed with any of these substances without undergoing any perceptible change in its chemical properties.

Art. 118.—*Hæmostatic Properties of Alnus Incana.*

By Thomas R. Dupuis, M.D., Professor Botany in Royal College of Physicians and Surgeons, Kingston.

(*Canada Lancet;* and *The Medical Record,* Dec. 15, 1871.)

Dr. Dupuis recommends the Alnus incana (Tag alder), so common in the States and Canada, as an excellent hæmostatic. He has prescribed the bark both externally and internally, and has never observed any ill effects follow its use, except occasionally nausea and vomiting when taken too freely. Four cases are related—three of wounds and one of serious epistaxis—which were successfully treated with this remedy. He has also prescribed it in hæmoptysis and in menorrhagia with benefit; it is also well adapted to any internal or external passive hæmorrhages in which astringents are generally esteemed beneficial.

In closing his article, Dr. Dupuis solicits for the decoction of the bark of Tag alder a trial from all those who may be interested in the development of the medical remedies of our own country.

Art. 119.—*On the Therapeutic Value of the Nitrite of Amyl.*

By H. C. Wood, Jun., M.D., of Philadelphia.

(*American Journal of the Medical Sciences,* Oct., 1871.)

Dr. Wood has arrived at the conclusion that the nitrite of amyl in its action on the lower animals is an almost universal sedative on the nervous system, while on the circulation its uniform action is to lessen arterial blood-pressure; and he thinks that it also catalytically arrests oxidation. Dr. Wood's views, however, are not in accordance with those of some other writers, who believe that the nitrite acts on man as a powerful stimulant. It is true that the immediate effects of this agent on man are fulness of the head, flushing of the face, and violent action of the heart; but these symptoms are due to the dilatation of the capillaries, and are associated with lessened arterial pressure. In answer to the question as to the practical value of the nitrite of amyl, Dr. Wood suggests that as it checks oxidation and lowers temperature, it may possibly be of use in some fevers, but he has no clinical evidence to adduce in support of this view. In tetanus it ought to be theoretically of great value, because in this disease there is a condition of exalted functional activity of the reflex motor centres, and of these centres the nitrite is a powerful depressant, and there is some evidence that it has been serviceable in this affection. In angina pectoris the nitrite is of very great value in affording rapid and permanent relief, and not only in true angina pectoris, but also in those cases where there is well marked valvular disease of the heart. Dr. Wood has had an opportunity of using the nitrite in a case of valvular disease, attended with severe suffering, and its effect in relieving the pain, after the failure of other remedies, was astonishing. With

regard to the mode of administration, it has always hitherto been given by inhalation, and its insoluble and highly volatile nature renders it unfit for exhibition either in solution or mixture; but Dr. Wood thinks that it might be given when dropped upon a piece of sugar; when it is to be inhaled, five drops should be placed upon a handkerchief, and held close to the nostrils, the pulse being closely watched and taken as a guide as to the continuance or withdrawal of the drug.

Art. 120.—*Toxical Studies on Chloral Hydrate.*

By Benjamin W. Richardson, M.D., F.R.S.

(*British and Foreign Medico-Chirurgical Review*, April.)

The most important subject, in a toxicological point of view, that has been under discussion since our last report, has relation to chloral hydrate. The increasing employment of this narcotic by the members of the general public, without the advice of the professors of medical science, has been attended by several fatal occurrences; while in instances where fatal results have not taken place, peculiar symptoms have followed the frequent self-administration of the narcotic—symptoms of serious import, and demanding ready recognition. We have, consequently, devoted some labour to the investigation of certain facts bearing on the toxicological history of chloral hydrate, to which, and the results of our inquiries, we would now direct attention.

1. We have endeavoured to ascertain what is a dangerous and what a fatal dose of chloral hydrate. The conclusion at which we have been able first to arrive on this point is, that the maximum quantity of the hydrate that can be borne, at one dose, bears some proportion to the weight of the animal subjected to its influence. The rule, however, does not extend equally to animals of any and every class. The proportion is practically the same in the same classes, but there is no actual universality of rule. A mouse weighing from three-quarters of an ounce to an ounce will be put to sleep by one quarter of a grain of the hydrate, and will be killed by a grain. A pigeon weighing twelve ounces will be put to sleep by two grains of the hydrate, and will be killed by five grains. A guinea-pig weighing sixteen ounces will be put by two grains into deep sleep, and by five grains into fatal sleep. A rabbit weighing eighty-eight ounces will be thrown by thirty grains into deep sleep, and by sixty grains into fatal sleep.

The human subject, weighing from one hundred and twenty to one hundred and forty pounds, will be made by ninety grains to pass into deep sleep, and by one hundred and forty grains into a sleep that will be dangerous.

From the effects produced on a man who had of his own accord taken a hundred and twenty grains of the hydrate, and who seemed at one period to be passing into death, we were led to infer that in the human subject one hundred and forty grains should be accepted as dangerous, and one hundred and eighty as a fatal dose. Evidence has, however, recently been brought before us which leads us to think that, although

one hundred and eighty grains would in most instances prove fatal, it could, under very favourable circumstances, be recovered from.

Dr. Hills, of the Thorpe Asylum, Norwich, has, for example, favoured us with the facts of an instance in which a suicidal woman took no less than *four hundred and seventy-two grains* of the hydrate dissolved in sixteen ounces of water, and actually did not die for thirty-three hours. Such a fact, ably observed as it was, is startling; but it does not, we think, militate against the rule that one hundred and forty grains is the maximum quantity that should, under any circumstances, be administered to the human subject.

2. A second point to which our attention has been directed is, what quantity of hydrate of chloral can be taken with safety at given intervals for a given period of time, say of twenty-four hours. To arrive at some fair conclusion on this subject, we calculated from a series of experiments the time required for the development of symptoms from different doses of the hydrate, the full period of the symptoms, and the time when they had entirely passed away. Great difficulties attend this line of investigation; but we may state, as a near approximation to the truth, that an adult person who has taken chloral hydrate in sufficient quantity to be influenced by it, disposes of it at the rate of about seven grains per hour. In repeated doses, the hydrate of chloral might therefore be given at the rate of twelve grains every two hours for twenty-four hours, with less danger than would occur from giving twelve times twelve (144) grains at once; but we do not think that amount ought, except in the extremest emergencies, to be exceeded, in divided quantities.

3. A third point to which we have paid attention is, the means to be adopted in any case when, from accident or other cause, a large and fatal dose of chloral hydrate has been administered. We can speak here with precision. It should be remembered that this hydrate from its great solubility, is rapidly diffused through all the organism. It is in vain, consequently, to attempt its removal by any extreme measures after it has fairly taken effect. In other words, the animal or person under chloral, like an animal or person in a fever, must go through a distinct series of stages on the way to recovery or death; and these stages will be long or short, slightly dangerous or intensely dangerous, all but fatal or actually fatal, according to the conditions by which the animal is surrounded. One of the first and marked effects of the chloral is reduction of the animal temperature; and when an animal is deeply under the influence of the agent, in the fourth degree of narcotism of Dr. Snow, the temperature of its body, unless the external warmth be carefully sustained, will quickly descend seven and even eight degrees below the natural standard. Such reduction of temperature is itself a source of danger; it allows condensation of fluid on the bronchial pulmonary surface, and so induces apnœa, and it indicates a period when the convulsion of cold (a convulsion which sharply precedes death) is at hand.

We offer these explanations in order to indicate the first favourable condition for the recovery of an animal or man from the effects of an extreme dose of chloral hydrate. It is essential that the body of the animal be kept warm, and not merely so, but that the air inspired by the animal be of high temperature. The first effort to recovery, in short, should consist in placing the animal in a warm air. This fact is perfectly

illustrated by experiment on the inferior animals. In the pigeon an air of 95° Fahr. is most favourable, in the rabbit an air of 105° to 110°, in the dog the same. In man the air to be breathed should be raised to and sustained at 90° Fahr. at least. *

The next thing to be remembered in the recovery of persons under the fatal influence of chloral hydrate is to sustain the body by food. I find that even under deep sleep from the narcotic, although the process of waste is less than is common under natural conditions of rest, there is still a very considerable waste in progress, which, if not made up, is against recovery. I find also that the digestive and assimilating powers, though impaired during sleep from chloral, are not arrested, but may be called into fair action with so much advantage, that if two animals be cast into deep sleep by an excessive quantity of the narcotic, and one be left without food and the other be artificially fed on warm food, one-fourth of the chance of recovery is given to the animal that is supplied with food. In the human subject warm milk, to which a little lime-water has been added, is the best food. Milk is very easily administered mechanically, and it should be administered in the proportion of half a pint every two hours.

4. The fourth point to remember is to sustain the breathing; in the inferior animals the question of life or death can be made to turn on this pivot. But the artificial respiration must be carried out with great gentleness; it must not be done by vehement movements of the body or compressions of the chest, but by the simple process of inflating the lungs by means of small bellows, through the nostrils. We have devised in the course of our researches various instruments for artificial respiration—viz., a small double-acting bellows, a small syringe, and a double-acting india-rubber pocket-bellows; and we have lately made an instrument which acts by a simpler method still—*i. e.*, we merely attach to a single hand bellows a nostril-tube, and gently inflate the lungs, letting the elasticity of the chest-wall do the work of expiration. A little valve near to the nostril-tube effectually stops all back currents from the lungs into the bellows. For the human subject, five charges of air from the bellows should be given at intervals of five seconds apart.

The symptoms of acute poisoning by chloral hydrate are, briefly, profound coma, great muscular relaxation, apoplectic breathing, and flushing of the face and neck, with intermissions of pallor. The eyes are usually rolled upwards as under chloroform, and at times, as impressions of motion are made on the surface of the body, there is muscular tremor, which may pass into convulsion. In time the extremities become cold, and the bronchial surfaces become charged with frothy mucus, which greatly impedes the breathing and hastens the final result.

The chronic symptoms of chloral-poisoning are—sleeplessness, unless the narcotic be taken in very large doses; great mental irritability, and muscular prostration; uncertainty of movement, with tendency to fall forward; caprice of appetite and frequent nausea. In some cases there is injection of the conjunctivæ, and in other cases yellowness.

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* We have no doubt it will be found, as the chronicle of death from chloral hydrate increases, that the mortality from the agent will be the greatest when the thermometrical readings are the lowest, and *vice versâ*.

The urine, in extreme cases, contains albumen, and the bowels are commonly constipated, the evacuations being white and hard. Chloral hydrate does not produce the ecstatic dream or delirium caused by opium or haschish; on the contrary, it causes, through all the stages of its action, a sense rather of depression than of elevation of mental faculty.

Art. 121.—*Therapeutic Uses of Hydrate of Chloral.*

By Oscar Liebreich, M.D.

(*British Medical Journal*, March 2.)

Dr. Oscar Liebreich, in a third edition of his treatise on hydrate of chloral, gives a general view of the classes of disease in which observation has allowed a general opinion to be formed as to the merits of the remedy. Numerous experiments in all countries have established the fact that chloral has the property of producing sleep in all pathological states where it is desirable to obtain this; and it does this without giving rise to any mischievous results. Some special peculiarities with regard to its action have, however, been observed. In a case of gout, for instance, a dose of hydrate of chloral produced excitement; but when the patient had been treated with carbonate of soda for a week, the same dose acted as a hypnotic. This, according to Dr. Liebreich, was due to the circumstance that, at first, the formation of urate of soda deprived the blood of its normal amount of alkali, and thus prevented the transformation of the chloral into chloroform. On the other hand, and in accordance also with the theory of the transformation of chloral, it has been noticed that in typhus, where there is an excess of alkali in the blood, small doses of chloral readily produced sleep, while larger (even moderate) quantities gave rise to symptoms of poisoning. With regard to the use of chloral in operative surgery, the results of Dr. Liebreich's experiments have led him to expect with certainty that the drug may be used in such a way as to produce sufficient anæsthesia for even severe operations on the human subject. His observations of animals have shown him that there is a marked difference between a poisonous dose and the quantity sufficient to produce complete anæsthesia; and this meets the objection to chloral as compared with chloroform, that it is not introduced gradually into the system, but at once. Although experiments have shown that small doses of chloral have little influence on the circulation, Dr. Liebreich advises caution as to its use in heart-disease. In trismus and tetanus larger doses are indicated, as small quantities do not produce the necessary action on the spinal cord. Hydrate of chloral has been found to act beneficially in a number of cases of puerperal convulsions; and Dr. Liebreich is disposed to explain this by accepting Frerichs' theory, that the convulsive attacks are connected with the transformations of urea into urate of ammonia, and by supposing that besides the production of chloroform, there is a formation of hydrochloric acid which neutralizes the ammonia. Among other diseases in which there has been a general agreement of opinion as to the beneficial effects of hydrate of chloral, Dr. Liebreich mentions senile insomnia, delirium tremens, nervous asthma, chorea, dental convulsions in children, sea-sickness, &c.

Art. 122.—*Notes on Chloral.*

By Mr. Fairthorne.

(*American Journal of Pharmacy;* and *Edinburgh Medical Journal*, February.)

Mr. Fairthorne says:—"Pure hydrate of chloral, according to Dr. Rieckher, does not take fire when heated in a spoon over a spirit lamp, but evaporates without residue [the alcoholate when similarly treated inflames]. Nitric acid, sp. gr. 1·20, either cold or hot, should not produce any reaction with it. I find that its aqueous solution produces a dense precipitate when mixed with solution of subacetate of lead. The hydrate is readily dissolved by alcohol, ether, oil of turpentine, benzole, bisulphide of carbon, and the fixed oils. The solution in the last-named article might prove of value to the physician as a topical application, perhaps available in neuralgic or gouty affections. When equal parts of camphor (in small pieces) and hydrate of chloral in crystals are shaken together in a vial and allowed to stand, they become fluid, forming a clear solution. This might also be of use as an external remedy. When hydrate of chloral and sulphuric acid are mixed a great reduction of temperature takes place. Both pure chloral and its aqueous solution dissolve morphia freely. Quinia is soluble, to a considerable extent, in a strong solution of hydrate—six grains readily dissolving in one and a half fluid drachms. Cinchonia, strychnia, veratria, aconitia, atropia, are also soluble in the same menstruum. From this it appears to be a general solvent for the alkaloids, and perhaps their solutions might be used with advantage for making ointments, or for mixing with oils for liniments, &c. The solution of quinine just mentioned is somewhat fluorescent, but not quite as much so as that of the sulphate. When chloral and glycerine are mixed a crystalline substance is formed in a few hours. Chloral is a good solvent for camphor or for crystallized carbolic acid, which it deprives of odour to a great extent, and renders quite soluble in water. When the latter solution is added to sulphuric acid, a pink-coloured solid is produced, which is probably a compound of sulpho-carbolic acid and chloral. When benzoic acid is added to chloral, and slightly heated, it dissolves, and when cold the mixture solidifies into beautiful radiating crystals.

Art. 123.—*Physical Restraint in the Management of the Delirium of Fever.*

By T. J. Maclagan, M.D.

(*The Lancet*, Dec. 2.)

Dr. Maclagan, who, during the years 1864, '65, and '66 was medical superintendent of the Dundee Infirmary, a large hospital of 260 beds, has no hesitation in saying that physical restraint is often absolutely necessary to prevent a delirious patient from injuring himself and disturbing all the other patients in the ward, and that a folded sheet is by far the

best means by which the necessary restraint can be applied. It is the kindest thing that can be done to the patient, it is the best for the other occupants of the ward, and the easiest for the attendants. It should, however, never be had recourse to unless it is really required, and should never be applied except by the instructions and under the direction of the medical attendant. It cannot be left to the nurse to determine either the cases in which it is proper to use restraint or the amount which is requisite to keep the patient in bed.

Art. 124.—*Gelsemium in the Treatment of Irritable Bladder.*

By W. Scott Hill, M.D., of Augusta, Maine.

(*American Journal of the Medical Sciences*, Jan.)

Dr. Hill first observed the beneficial effects of gelsemium in irritation of the bladder, in a case complicated with gonorrhœa. In this case the patient, after taking a few doses of a preparation containing the medicine in question, was free from his pain while micturating, and the calls to evacuate the bladder much less frequent. As the other ingredients did not possess this property, Dr. Hill resolved to give it a trial. A case soon presented itself, and it was successfully employed.

In five cases reported by Dr. Hill the same symptoms were present, namely, frequent calls to void the urine, which was small in quantity, often passing *guttatim*, and excessive pain attending micturition. In three cases it was of long standing. In one case the origin of the disease was traumatic, and no permanent cure was anticipated so long as the stricture remained. In two cases the suffering was very severe. When last seen, there had been no return of the disease in either patient. One source of irritation in all the cases was evidently the acid urine, which was remedied by administering carbonate of potassa. Many nights of disturbed sleep, in addition to the pain, had overtaxed the nervous system, and the bromide of potassium was given as a sedative. The preparation of gelsemium employed was Tilden's fld. ext.

Art. 125.—*On the Results of Warm Climates in the Treatment of Pulmonary Consumption, as Exemplified by an Analysis of* 251 *Cases.**

By C. Theodore Williams, M.D., F.R.C.P., Physician to the Hospital for Consumption, Brompton.

(*The Lancet*, May 14.)

The author, after dwelling on the difficulties involved in the selection of proper climates for consumptive patients, enumerates three grounds

* Read at a Meeting of the Royal Medical and Chirurgical Society, April 23.

for forming an opinion. First, the alleged immunity from phthisis of certain localities. Second, the existence in certain localities of atmospheric conditions the reverse of those under which the disease was contracted. Third, the ascertained results of certain climates on similar cases. After pointing out objections to the "immunity" ground, arising from diversity of the climatic conditions accompanying it, he discusses the second, or "contrast" ground of selection, and in order to explain it, the causation of phthisis is considered and shown to be probably twofold; first, inflammatory—that is, influences which excite or keep up inflammatory affections of the lungs, such as great variations of temperature, a combination of cold and damp, &c.; second, septic—that is, influences which blight and corrupt the bioplasm of the blood or lymphatics, such as foul air, bad nourishment, the combination of warmth and damp, &c.

The differences in the type and distribution of phthisis arising from each of these causes are pointed out as indications in climatic treatment, dryness and warmth being desirable in consumption of inflammatory origin, and dryness and purity of air for consumption of septic origin.

The far greater importance of the third or "fact" ground is then dwelt on, and, after regretting the paucity of published information of this character, and especially of statistics, Dr. Theodore Williams furnishes, from the practice of Dr. C. J. B. Williams and himself, a statistical account of 251 cases of consumption who passed periods varying from one to eleven winters in warm climates out of the United Kingdom.

Sex.—190 were males and 61 females.

Age.—The average age at the onset of the disease was among the males 29·04, and among the females 23·39; nearly half the number of both sexes being attacked between twenty and thirty.

Predisposition.—Family predisposition was present in 52 per cent., and hereditary in 27·8 per cent.

Origin.—11 were cases of scrofulous phthisis, in 55 the disease had an inflammatory origin, in 41 a catarrhal, and in 2 a syphilitic; 2 cases followed on asthma, 6 were instances of hæmorrhagic phthisis, and 130 of chronic consumption.

Hæmoptysis existed in 62½ per cent. in varying amounts.

State of Lungs.—At the time the patients quitted England 61 per cent. were in the first stage, 21½ per cent. in the second, and 17½ per cent. in the third stage. 67 per cent. had one lung alone affected, 33 per cent. both lungs.

A comparison is then made between these cases taken separately and 1000 cases of which they form a part; and it is shown that in the "climate" patients the disease was more advanced, but at the same time more local in its character.

The climates of which a trial was made were classified as follows:—1. Moist temperate, as Pau, Bigorre, and Rome. 2. Dry climates of the Mediterranean, including the Riviera, Malaga, Algiers, &c. 3. Very dry climates of Africa, including Egypt, Cape of Good Hope, and Natal. 4. Moist Atlantic, as Madeira, the Canaries, and the West Indies. 5. Miscellaneous, including India, the Andes, New Zealand, &c. 6. Sea voyages.

The average of winters passed abroad by each patient was $2\frac{1}{2}$; and of 18 patients who took voyages, the average number of voyages per patient was $2\frac{1}{2}$.

The results of the climate on the *general* condition of these patients were that 65 per cent. were more or less improved, 6 per cent. remained stationary, and 29 per cent. became worse. The *local* effects on the lungs were, that in $43\frac{1}{2}$ per cent. cure or decrease of the disease took place, in 14 per cent. it remained stationary, and in 42 per cent. it increased either in the way of advance or extension or of both.

The influence of the various groups of climates is next considered; and from the results of a table it is shown that the *moist* climates, temperate or warm, yielded a percentage of "improved" varying from 50 to 55, of "stationary" varying from $4\frac{1}{2}$ to $14\frac{1}{4}$, and of "worse" from 32 to 45; also that the *dry* climates yielded percentages of "improved" varying from 58 to 65, of "stationary" from 20 to 25, and of "worse" varying from 10 to 21; and that of the patients who took sea voyages, 89 per cent. improved, $5\frac{1}{2}$ per cent. remained stationary, and $5\frac{1}{2}$ per cent. became worse. The marked difference in the effects of the dry and moist groups gives rise to an inquiry as to whether it might not be accounted for by difference in the class of cases sent to each group of localities. This results in the conclusion that, except as regards the Pau cases, which were slightly more unfavourable than the rest, there was no important difference; and the natural inference is, that the less favourable progress of the patients was owing to some element in the moist climates themselves.

The leading meteorological features of the climates of Pau, Rome, and Madeira are then sketched, the effects of each pointed out, and their less favourable results attributed to their moister and less stimulating character.

With reference to the question whether or no certain forms of consumption derive special benefit from any particular climate, the author deduces from 55 cases of phthisis of inflammatory origin who wintered in various warm or temperate localities, that a dry climate is more favourable than a moist one for the treatment of this form of the disease; and as regards phthisis of catarrhal origin the deduction from 41 patients is that "warmth and equability of climate are more important than dryness for patients of this description."

Forty of the climate cases died, and 202 were living at the last report. Among the former the average duration of life was eight years, and among the latter about nine years, which, when compared with the average of life among patients who did not go abroad, showed a slight extension of duration. The effect of cod-liver oil in prolonging life is demonstrated by the instances of thirteen patients, who, though they had the full advantages of climate, either omitted oil or took it irregularly. Among these, who are all dead, the average duration was four years eight months and a half.

Dr. Wilson Fox, professing his inability to grapple with the vast array of figures presented to the Society, was fain, by a comparison of the thousand cases brought before the Society some time ago by Dr. Williams with those now before him, to come to the conclusion that climatic results are *nil*, inasmuch as no single climate exhibits a result

equal to all the cases quoted collectively. He also referred briefly to the fact that many cases of phthisis, apparently hopeless, live on in London year after year, and asked the author if cases of septic and inflammatory origin can be accurately distinguished, and if so, how.

Dr. Hermann Weber expressed his belief that mountain air most benefited cases of the inflammatory type, and that early hours and quiet habits had also much to do with success of treatment.

Dr. Heywood Smith quoted personal experiences of a winter on the Riviera in proof of the opinion enunciated by Dr. Williams, that a high and dry was better than a moist climate.

Dr. Leared had arrived at the conclusion, from personal experience, that climatic laws with reference to phthisis were empirical, and quoted Iceland as a country in which phthisis is unknown, but where the houses have no ventilation; and Palestine, part of which is below the level of the sea. He asked the author how, during life, the particular variety of phthisis could be accurately determined?

Mr. Charles Brooke remarked that there were two distinct climates in Natal, the contrast between the coast-line, in which the rainfall was enormous, and the plateau, being very striking.

Dr. C. J. B. Williams replied to so much of Dr. Wilson Fox's criticisms as referred to the inflammatory, catarrhal, and septic varieties, and remarked that by the inflammatory type were meant those cases that commenced in a distinctly acute attack, whether pneumonic, pleuritic, or pleuro-pneumonic, and subsequently drifted into phthisis. He believed that Madeira was particularly suited to cases of phthisis aggravated by frequent catarrhs; that though statistics on this and on all other medical subjects ought to be received with caution, he could point out many cases benefited by residence in particular places.

Dr. C. Theodore Williams expressed his obligations to the Fellows of the Society for the favourable way in which his paper had been received, and, in reply to Dr. Wilson Fox, stated that the cases now before the Society could not fairly or properly be classed or compared with the thousand cases brought forward last year. In the former the terms "improved," "stationary," "worse," &c., applied to the condition of the patients after a residence abroad of one or more winters; whereas, in the latter, the result was recorded at the end of the entire system of treatment, which averaged about eight years for each case. The statistics showed plainly that life was prolonged by residence abroad, though to a small extent, the average for each patient being $2\frac{1}{3}$ winters. He had also proved in a former paper that cases of the inflammatory type had a longer average duration than other varieties of the disease. In reply to Dr. Hermann Weber the speaker remarked that his (Dr. Williams') experience as to septic and inflammatory varieties had been gleaned in the out-patient department of the Brompton Hospital, from a close study of the predisposing and exciting causes of the disease. Dr. Williams replied briefly to the queries put by other speakers, and remarked in conclusion that, without continuous care and labour for many years on the part of Dr. Williams, his father, the compilation of these statistics would have been impossible.

Art. 126.—*Climate in its Relations to Consumption.*

By Manning Simmons, M.D.

(*American Journal of the Medical Sciences*, January.)

In summing up the result of his observations Dr. Simmons makes the following deductions:—

1. That phthisis occurs in every zone, and that its origin is not rendered impossible by any conditions of climate of which we have any knowledge.
2. That the disease, contrary to a very generally received opinion, is not more frequent in cold regions, and that a great degree of cold does not seem to favour its production.
3. That the same remark may be made in relation to heat.
4. That of all the influences which are favourable to its development and progress, we must recognise moisture, especially combined with heat.
5. That great variability in the qualities of heat, cold, and moisture are, however, to be recognised as most injurious.
6. That the most inimical influence to the origin and development of the disease is that exercised by the climatic conditions and habits belonging to extreme altitudes.
7. That consumption is, as a general rule, more frequently met with on sea-shores, and diminishes, to a certain extent, in proportion to the distance from these localities.

Art. 127.—*On a New Method of Nourishing Patients per Anum.*

By W. O. Leube, M.D., of Erlangen.

(*Deutsches Archiv für klinische Medicin*, May, 1872.)

"In the course of recent investigations on the nourishment of patients per anum, I composed for this purpose an injection-mass, which differs considerably in quality from ordinary nutrient clysters. This I have used for four months in my investigations on nutrition, both at the bedside and on animals. I have learnt that this new method of nutrition is not only valuable in clinical practice, but also gives results in physiological investigations. With the object of introducing into the large intestine nutritive material resembling its ordinary contents, and of establishing, as far as possible, natural conditions in this part of the alimentary canal by artificially produced digestion, I have endeavoured to transfer to the large intestine a part of the digestive processes which normally take place in the small intestine. This object has, I believe, been attained to a great extent by a large use of pancreatic substance in the composition of the nutritive clysters. It was thought that the substance of this gland, which takes so great and so active a part in the process of digestion, would, when brought into contact in the large intestine with substances capable of being digested, and when kept there

at a constant temperature, develope its full digestive power. This supposition has been completely confirmed by results.

"The injection-mass is prepared in the following manner:—From 50 to 100 grammes of the pancreas of the pig or ox are carefully deprived of fat, and finely minced. Then from 150 to 300 grammes of beef are minced and grated. Both substances are then rubbed down in a mortar with some warm water, in order to form a thick soup, which is then taken up into a clyster-syringe, furnished with a wide opening. If one wishes to submit, at the same time, fat to digestion, from 25 to 50 grammes of this substance may be added. Starch likewise may be added. A purgative clyster is to be administered one hour before this injection.

"The following are the general results testifying to the nutritive value of pancreatic clysters, which have been obtained from my physiological investigations, made almost exclusively on dogs:—

"1. The fæcal mass which is passed after the injection of flesh and pancreatic substance, and after the injection-mass, has remained for a long time in the large intestine in almost all instances, does not differ from ordinary fæces either in appearance, smell, or consistence, and usually does not show any other signs of the presence of muscular fibre.

"2. The proportion of albuminous material is not diminished in an animal when the greater part of the albuminous food has been removed and replaced by anal injections of pancreatic substance.

"3. An animal, after it has been deprived for a time of albuminous food, on the day that it is again nourished with albuminous material in the form of anal injections of flesh and pancreatic substance, excretes more than on the previous day of albuminous material, corresponding to the albuminous contents of the nutriment injected per anum.

"4. Fat also in large quantities may be digested in this manner, on mixing it with pancreatic substance.

"5. Starch, when added to the injection-mass, is converted into sugar. This change probably may also be effected, in a normal manner, through the action of the mucous membrane of the large intestine.

"The therapeutical action of the above-described method of nutrition was proved to me in two cases in which the clysters were used for a long period. In one of these cases there was carcinoma of the upper part of the digestive canal, and in the other gastric ulceration caused by the patient having swallowed tincture of iodine. In the latter case, in consequence of persistent vomiting of ichorous material, no kind of nourishment could be administered through the mouth; still the patient, after the first administration of clysters, containing flesh, fat, and pancreatic substance, remained relatively well.

"The following is a *résumé* of my experiences by the bed-side of this method of nutrition:—

"1. The injected-mass, when it consists of nothing more than meat and pancreatic substance, never causes any diarrhœa, but, on the other hand, generally remains in the large intestine from twelve to thirty-six hours without giving rise to a stool.

"2. The patient experiences no disagreeable sensations after the injection, but rather a feeling of ease in the abdomen. In every case I

made out that the pulse became fuller, that there was an improvement in the general condition and spirits of the patient.

"3. The clysters are not well borne at first; the less digested portion of the injected mass being returned.

"4. The above-described injection-mass is superior to other substances recommended for rectal injections through its efficiency and the readiness with which it may be made."

Art. 128.—*On Hydramyl as a General Anæsthetic.*

By Benjamin W. Richardson, M.D., F.R.S.

(*Medical Times and Gazette*, Oct. 21.)

In the course of the present year [1871] Dr. Richardson has made a new investigation of the amyl hydride as an anæsthetic. He was led to this new, or rather renewed, research by some observations on the effect of the compound anæsthetic ether, when it was being used in the form of spray. This compound is a mixture of amyl hydride and rectified ether. The facts Dr. Richardson observed in using it for producing local anæsthesia were, that when it was applied for operations on the nose and mouth the patients often passed imto a temporary general insensibility whenever the operation was prolonged. In an operation for cleft palate in a youth, Mr. Christopher Heath being the operator, this general anæsthesia was twice fully developed during the operation. In a case where a small but tedious operation was carried out for removing a piece of dead alveolus, the same event occurred, and even in two cases of simple extraction of teeth it was repeated. The sleep in all these cases was so insensibly induced, was so gentle, so deep, and yet so temporary, it did not fail to attract Dr. Richardson's attention; and as it was clear the insensibility was due to the inhalation either of the vapour of the hydride or of the ether, the author began a series of inquiries as to the part played by the hydride. To amyl hydride, for the sake of brevity, the name of *hydramyl* has been given. The fluid has a specific gravity of ·625, and boils at 86° Fahr. (30° Cent.). It is nearly inodorous. When breathed it creates no irritation. On June 6th Dr. Richardson administered hydramyl for the first time for a short operation—viz., the extraction of a firm molar tooth from the lower jaw, Mr. Peter Matthews being the operator. The patient was a woman thirty years of age. Two fluid drachms of the hydramyl were poured into a small vulcanite inhaler, and, being given to the patient, she was asked to take a few deep inspirations. She carried out the instructions readily; and at the end of twenty seconds, as there was distinct evidence of an effect, Dr. Richardson removed the inhaler, and asked her to open her mouth. She complied, and Mr. Matthews immediately extracted the tooth. The whole proceeding was from twenty-five to thirty seconds. Within the minute the patient had recovered, and was talking consciously. She said immediately after she commenced to inhale she felt as if she were passing into a natural sleep. She remembered being told to open her mouth, and said she obeyed "as well as she could,"

but she could recall nothing more relating to the operation; she felt nothing whatever of the extraction. In recovering she had neither vomiting nor nausea, although she had breakfasted a few minutes before; in brief, her recovery was as perfect as it was rapid.

The character of the anæsthetic sleep itself was most satisfactory. It was induced without a movement of any kind; the face retained its natural colour and expression; the pulse underwent no change whatever.

Here, therefore, there was insensibility to pain before the actual abolition of consciousness.

Dr. Richardson next administered the vapour of hydramyl on June 19 and 24 to three patients for the extraction of teeth, and in both cases with success; but he found a little difficulty, owing to the higher temperature of the air that then prevailed, in retaining the fluid in the inhaler, its lightness and low boiling-point causing it to evaporate with too great rapidity—in fact, a few breathings of the patient emptied the inhaler; he therefore proceeded to an endeavour to meet this difficulty by slightly weighting the fluid with a heavier body, but one having still a vapour density nearly the same, and a low boiling-point.

PART II.—SURGERY.

SECT. I.—GENERAL QUESTIONS IN SURGERY.

ART. 129.—*On the Surgical Treatment of Aneurism.*

By TIMOTHY HOLMES, M.A., F.R.C.S., Professor of Surgery and Pathology to the Royal College of Surgeons.

The main propositions which Mr. Holmes hopes to establish in the lectures now in course of delivery at the College of Surgeons are as follows:—

1. That aneurisms, of whatever form and however near the heart they may be, ought not to be regarded as incurable, but should be made the objects of definite methodical treatment, internal or external.

2. That there is definite proof, from pathological anatomy and from surgical experience, of the curative influence of Brasdor's operation in innominate aneurism, and of its beneficial effects in some cases of aortic aneurism.

3. That arteries may be successfully tied and obliterated without their continuity being interrupted; and that this modification of the ligature, whilst affording much security against secondary hæmorrhage, and thus much diminishing the danger of the operation in general, may very probably in future enable surgeons to deal successfully with cases in which it may be necessary to tie the first part of the subclavian (whether on the distal or proximal side of an aneurism) or the innominate artery.

4. That galvano-puncture may be used with at any rate temporary benefit in thoracic aneurism; that its use is not so dangerous as to render further trials of it inexpedient; and that there is good hope that the method may be so far perfected as to make it a safe and regular plan for the treatment of thoracic, subclavian, and other forms of aneurism.

5. That many cases, such as those in which ligature of the artery near to the heart has been resorted to for the cure of subclavian and subclavio-axillary aneurism, may be made amenable to improved methods of pressure.

6. That aneurismal tumours situated even as high as the lower part of the abdominal aorta, those of the mesenteric and other branches of the aorta, and of the iliac arteries, may be treated with success by rapid coagulation of blood under pressure; but that this method is a dangerous one, and should not be used until internal treatment has failed.

7. That there are cases of abdominal aneurism in which Mr. Syme's suggestion of reviving the old operation is worthy of further trial.

Art. 130.—*On Precocious Erysipelas.*

By M. Verneuil.

(*Medical Times and Gazette,* May 11.)

At a meeting of the Société de Chirurgie on April 24, M. Verneuil introduced the subject of "The Causes and Mechanism of Precocious Erysipelas." He observed that numerous had been the discussions on the causes of erysipelas; for some, even at the present day, it is an exanthem, and for others a primarily local disease. According to some it may arise spontaneously, while others deny that it ever can do so—these last maintaining, and in M. Verneuil's opinion justly, that it has always been preceded by a prior accident or by a traumatism. He does not enter into the question of contagion, merely stating that there is a variety of erysipelas in which the patient gives himself the disease by a kind of auto-inoculation. This variety of traumatic erysipelas is marked by its precocity—that is, by its following the traumatism very speedily, sometimes coming on the same evening, or the next day after an operation. This is an exceedingly important characteristic, quite adverse to the idea of contagion, which could not operate so rapidly. When erysipelas supervenes after the removal of tumours, operations, &c., it does so about the fifth or sixth day, and in these cases it is to be observed that incisions have been made in healthy tissues. On the other hand, precocious erysipelas appears after small operations performed on parts in a state of suppuration—*e.g.*, after exploration of a bony fistula, extraction of a splinter, or making a counter opening for drainage. M. Verneuil has even seen a patient who had erysipelas each time his fistula was explored. The removal of the most recent crust covering a wound may excite it.

"In all these cases of precocious erysipelas there is, on the one hand, a traumatism, and on the other a centre of suppuration, the one dependent upon the surgeon, the other upon the patient. There takes place here, in fact, something analogous to inoculation; for it is just as if the surgeon took pus on his lancet from the patient in order to inoculate him with it—for we open largely a series of lymphatic vessels in a place close to another which is yielding pus or septic matters. Absorption takes place, and there is introduced erysipelas or angioleucitis, or rather both the one and the other. The more I see, the more I am persuaded that erysipelas and angioleucitis are in nowise different, there being the same commencement with an enormous increase of caloric, the same fever, and the same course. But I only mention this by the way, drawing from it the practical conclusion that this septic erysipelas can be prevented. Holding the conviction which I have just explained, I have pursued the practice of cauterizing or touching with tincture of iodine all incisions which I practise in suppurating lesions; and this is a precaution, to the efficacy of which I do not hesitate to attribute a great value."

M. Desprès had long held and published the same opinions, believing that erysipelas is not contagious, and that it is really an affection of the

lymphatics. As to its contagion, no proof whatever has been advanced; for it will not suffice to say that it is so because patients in the vicinity of each other contract it. In this way menstruation itself might be said to be so, for many women have this come on earlier when they enter a hospital where other women are menstruating. When the lymphatic vessels have been opened, we may have sometimes angioleucitis, and at others erysipelas, or both at the same time.—M. Chassaignac observed that angioleucitis and erysipelas are entirely distinct. The former is a phlegmasia of the subepidermic network, giving rise to red traces, the network being separated by lozenges of healthy skin. There are also the engorged glands, in which the inflamed vessels terminate. In erysipelas we have a uniform colour, with festooned edges, but without regular lines. It may commence by the hand, mount up the arm, and redescend to the hand, which is not the case with angioleucitis. In angioleucitis there are never phlyctenæ, which are present in most cases of erysipelas. In erysipelas there is a serious general condition, while in angioleucitis the patients sometimes clamour for food. Still, it is possible that the two affections may coexist. M. Chassaignac believes in spontaneous erysipelas, and refers to a case in which the disease has attacked the face in three successive years. He also believes that it may be propagated by contagion.—M. Blot believes in the distinction between angioleucitis and erysipelas, and could not agree with M. Verneuil that the latter is always preceded by a lesion of the mucous membrane or skin. He referred to the case of an infant, kept most scrupulously clean, in whom this appeared in the back, where no lesion whatever could be discovered. In spontaneous erysipelas of the face, the eruption on the lips is preceded by general symptoms for three days—a condition very analogous to that of eruptive fevers. He is much disposed to believe the same thing takes place in traumatic erysipelas.—M. Le Fort, while inclining to M. Desprè's belief in the identity of erysipelas and angioleucitis, believes that the question of contagion must be answered in the affirmative.—M. Verneuil, in reply to M. Blot, observed that the initial lesion, whence erysipelas springs, may be a mere microscopic wound. In one of his own cases a patient had what seemed to be a spontaneous erysipelas of the face until it was recollected that the evening before he had epistaxis, which of course implies lesion of a vessel. The initial lesion may not always be detectible, but since this has been more sought for, negative facts have become more and more rare. In 999 times out of 1000 the erysipelas can be referred to such lesion.—In M. Trélat's opinion, erysipelas must be regarded as an infectious disease, of which angioleucitis must be looked upon as constituting one of the pathological elements.

Art. 131.—*On Epidermic Transplantation.**

By M. L. Reverdin.

(*Gazette Médicale de Paris*, No. 1, 1872.)

"Two years ago I presented to the Société de Chirurgie a patient upon whom I have practised the following experiment. I applied over a granulating wound a small piece of the superficial parts of the integument between two and three millimetres square, which had been removed by means of a lancet; this flap became adherent, and around it was formed an islet of cicatrix. I have repeated this experiment on a great number of wounds, and this proceeding, which is susceptible of various practical applications, has been adopted by several French and continental surgeons. I have recently experimented upon animals and studied the histological process, and the results which have been obtained form the subject of this communication.

"I should first mention that the grafts include epidermis and a layer more or less thick of the dermis; in practice it is almost impossible to do otherwise.

"My experiments have proved to me that the grafts may be taken either from different individuals of the same species or from individuals of different species. On the white man I have succeeded in implanting pieces taken from other white men, from negroes, and from rabbits. On the rabbit I have successfully practised with grafts taken from other rabbits, from men, and dogs; on the sheep I have implanted pieces taken from man.

"When the transplantation is successful, the graft becomes adherent at the end of twenty-four hours (if not it may be retained in its place and still be made to take); it becomes swollen and wrinkled; towards the third day a smooth red circle commences to form around the graft, which is then depressed below the level of the granulations; on the following day the circle is of a pearly-grey colour and gradually becomes white; the areola then advances and the subsequent appearances resemble those occurring in marginal cicatrization.

"The islets thus formed are pretty regularly circular when the graft is placed at some distance from the borders of the ulcer; if it is near to this border or to another graft, the development of the epidermis is more rapid at the adjacent sides of the two cicatrices, the islets elongate, the marginal cicatrix also shoots out a process and, at a given moment, cicatricial offshoots, sometimes very long and narrow, are formed at these points.

"With regard to the grafts taken from pigmented skin (that of the negro and of a black cat), I have observed the piece gradually lose its colour and become quite white; the islets formed around these do not present any special coloration.

"The following are the results of microscopical examination (the pieces taken from man and the rabbit were hardened in a solution of chromic acid and the sections coloured in carmine or picrocarminate of ammonia; I have also studied fresh sections):—

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* Presented by M. Claude Bernard to the *Académie des Sciences*.

"In a section of a graft at the end of forty-eight hours one sees the epidermic cells of the piece in process of desquamation and their nuclei presenting appearances of vesicular transformation; at the borders of the graft the epidermis is prolonged for a short distance over the granulations; besides this it has passed between the dermis and the surface of the ulcer, and is prolonged more or less deeply. If the section, instead of being made at a certain distance from the border of the graft, falls just upon this border, the two enveloping portions are seen to run together and form one layer. The dermis therefore is enclosed between two layers of epidermis. This fact indicates that the graft is in some way fixed over its whole extent by the deep epidermic extension of which I have spoken.

"It is by this means that the graft is first united, for, on the one hand, these epidermic extensions are in intimate connexion with the embryonic tissue of the wound, and, on the other hand, the dermis does not present any modification or appearance of soldering.

"The epidermis then extends gradually along the surface of the wound, and the following appearances may be observed in a graft after six days: similar desquamation, a similar vesicular condition, and the two enclosing layers are well developed. At a later period a layer of epidermis of irregular thickness spreads, and from the deep surface of the graft fresh shoots are given off, sometimes very large and very irregular, which penetrate into the embryonic tissue; at the bottom of these shoots are very often found epidermic nests (globes épidermiques) resembling those of cancroid. At the limits of the islet the epidermic layer terminates in the form of a fan.

"In studying the constitution of this fan-shaped termination it may be observed to consist of voluminous epidermic cells with smooth walls, spherical in form, and enclosing each a large round nucleus; they are coloured by carmine, and, in their form, size, and their round nucleus they differ from older epidermis, and in their coloration and single nucleus from embryonic cells. Some of these large epidermic cells with round nuclei may be found in the deep layers of older epidermis in the islet. The fan-shaped extension by becoming flattened into stratified layers may probably assist the depression of the islet below the surface of the granulations.

"I have never seen the epidermic cells in process of proliferation or containing several nuclei, nor anything on the other hand indicating their formation in a blastema.

"With regard to the dermis, this, at the end of six days, is found to have been transformed; it is furrowed by embryonic vessels in continuity with those of the granulations; the elements, with the exception of the elastic fibres, are replaced by elements resembling those of granulations; it has returned almost completely to the embryonic condition.

"From this histological examination it results:—

"1. That the adhesion of the grafts is produced in the first place by epidermis and only secondarily by dermis.

"2. That the epidermis acts by contact (catabiotic action) in exciting the contiguous embryonic surfaces to become transformed into epidermis."

Art. 132.—*On Cutaneous Grafts.**

By M. Ollier.

(*Gazette Hebdomadaire*, No. 13, 1872.)

"In 1869 M. Reverdin demonstrated that small pieces of epidermis from two to three millimetres square, when transported to closing wounds, were susceptible of being engrafted on the surface of the granulations and becoming centres of epithelial formation, which would assist in hastening the cicatrization of the wound.

"The facts which I have the honour to submit to the Academy demonstrate that not only are small pieces of epidermis capable of being transplanted, but also large cutaneous flaps formed not only of the superficial layer of the dermis, but of the whole thickness of the integument.

"Instead of sowing small fragments of epidermis, I perform veritable cutaneous transplantations. I do not confine myself to sowing over the granulations small epidermic islets, I cover with large flaps several centimetres square a more or less considerable extent of the surface of the wound, the cicatrization of which I wish to hasten. I do not endeavour only thus to hasten the natural epidermization of the granulations, I close the wound by a borrowed layer of skin, which, when once engrafted, forms a limiting membrane quite different from ordinary cicatrices.

"When one transplants small epidermic or dermo-epidermic pieces, one may hasten undoubtedly to a certain extent cicatrization of the wounds, but cannot obtain a cicatrix differing from that which is produced naturally. The fundamental processes and even the structure are the same; and it has the same properties as cicatricial tissue.

"The epidermic pellicle, the formation of which has been hastened by the multiplication of the centres of epidermization, has the same characters as the superficial layer of ordinary cicatrices. It is so unstable that it may be destroyed under the influence of the least irritation. It is smooth, shining, and reveals through its transparency the violet-coloured tissue which constitutes the fundamental part of the cicatrix. At the periphery of chronic ulcers in the lower limbs it is transformed into a more or less thick epidermic layer, which, however, possesses no stability, and which ought to be considered as a pathological product. Under the epidermic grafts the proper tissue of the cicatrix comports itself as in cases where it is formed naturally; it has the same contractility, and consequently, the same inconveniences from a surgical point of view.

"By transplanting large cutaneous flaps, and by multiplying these, I can cover at a single sitting the greatest extent of the surface of a wound, and the cure then takes place by a process quite different to that carried on in the engrafting as hitherto practised.

"The pieces of skin may be taken either from the patient himself,

* Communicated by M. Claude Bernard to the *Académie des Sciences*.

or from other individuals. I have taken most of my grafts from limbs amputated on account of accident occurring to men otherwise healthy.

"In those cases in which I have been obliged to take the pieces of skin from the patient himself, I have, in order to do away with the pain of the operation, profited from an experiment, the results of which I communicated to the Academy ten years ago. This experiment proved the possibility of transplanting tissues which had been subjected to a low temperature. At that period I demonstrated that pieces of periosteum first frozen and then transplanted under the skin of another animal, could not only regain life, but also produce osseous tissue. Before practising cutaneous transplantation I apply to the skin a freezing mixture composed of ice and salt. When the skin is frozen, that is to say when it is white, bloodless, and insensible, I cut out pieces comprising the whole of the dermis, which, when transplanted on the surface of a wound, become perfectly engrafted."

Art. 133.—*On Wadding Dressings.*

By M. Alphonse Guérin.

(*Archives Générales de Médecine*, December, 1871; *Gazette Hebdomadaire*, No. 46, 1871.)

The dressing devised by M. Alphonse Guérin does not consist simply in dressing wounds with cotton wool: this agent indeed plays an active part by means of which the shortened or wounded limb benefits from the application of several grand surgical methods, each of which produces excellent results. The cotton wool is employed with the aim of filtering the air which comes in contact with the wound; it ought then to be applied in sufficient quantity for realizing the properties of a filter, and at the same time ought to be sufficiently abundant to exert elastic compression upon the covered parts.

Filtration of air and elastic compression are the objects to be attained by the dressings of cotton wool.

The following is the manner in which this kind of dressing is practised: we will suppose that the surgeon has to dress an amputation-wound of the thigh made by the circular method. Hæmorrhage having been arrested as much as possible by the application of ligatures, the wound is washed, at first with warm water and afterwards with a mixture of water and camphorated alcohol, or with some antiseptic fluid. The limb is then thoroughly cleansed and carefully wiped. The ligatures with the exception of that on the principal artery are cut short. The surgeon then proceeds to the cotton-wool dressing.

The wool which is about to be used ought to be quite fresh from the hands of the workman. In order to obtain it free from all morbid impurities, M. Alphonse Guérin opens the packet himself, which has been previously kept in a special place in the operating theatre.

The extremity of the stump is confided to an assistant, who keeps it stretched by compressing between the thumb and index finger each extremity of the horizontal diameter of the wound. A second assistant

holds the limb between his two hands, so as to keep the flaps together. The surgeon then disposes over the bottom of the wound in small successive layers fragments of the cotton-wool, which adhere immediately to the moist tissues with which they are brought in contact. No point is left exposed. The wound is gradually filled with tightly compressed wool. The surgeon then takes large layers of wool, the centres of which cover the extremity of the stump, other layers are rolled round the limb as far as the fold of the groin, and then others again are applied round the pelvis. Each layer must be applied as exactly as possible, and finally when the whole limb seems to be about three times its normal size, and is packed like a very precious object which would not bear the slightest shaking, the surgeon commences to bandage.

This application should be made as if for the purpose of elastic compression. The constriction should be progressive and be made as energetically as possible towards the end of the dressing. Although much force has been exerted in applying this bandage, one will be astonished to find that it is not too tight. This constriction and also the application of the cotton-wool as far as the trunk, where it is maintained by a bandage as tightly applied, are details of the greatest importance for obtaining good results.

"In dressing an amputation wound of the arm, the neck and chest ought to be enveloped in wool, in order to present a very powerful compression in the axillary and infra-clavicular regions. In the leg and forearm the cotton-wool dressing should be applied with care as high as the root of the limb.

"In flap amputations the wool is to be applied between the lips of the wound, as in the wounds made by the circular method. In resections the space around the ends of the bones is to be filled up in the same way, and the limb is then to be maintained in a gutter formed of two thick layers of wadding.

"Finally, in every case, the application always consists in a very exact and elaborate enveloping, maintained by a firmly compressing bandage. It will be seen that with this kind of dressing there is no attempt at immediate union. M. Guérin, however, encouraged by the results which he has already obtained, proposes, on an early opportunity, to attempt to obtain, without applying wool to the inner surfaces of the flaps, that kind of union which has always been considered so desirable.

After the thigh has been dressed, the patient is carried to his bed, where the limb is placed in an almost horizontal position. The surgeon when applying the dressing should not forget the position in which the stump will afterwards be placed; he ought, therefore, to take great care that the limb be held in the axis of the reclined trunk, so that the bandage will not become uneven, and cause too much constriction on certain parts.

The first phenomenon to be remarked by the patient is the absence of all pain. When carried to and placed on his bed, he does not experience the slightest painful sensation, even when the influence of chloroform has passed off.

"If, shortly after the operation, the patient should complain, it is only of a very tolerable pain. Sometimes it is a scalding sensation, caused by the application to the wound of an insufficiently diluted wash of

camphorated-alcohol, or, perhaps, the uneasiness may be due to agglutination of the hairs to the dressing and consequent dragging. In one case pain was due to the inclusion of a small nerve in a ligature. A precise analysis of the painful sensation will generally enable the surgeon to discover its origin. In cases where the sensibility of the stump indicates that the dressing is defective, *this ought to be immediately rectified.* If the patient suffers, it is because the compression is irregular, or because the air passes in at some point, and arrives directly at the wound. In cases of this kind, the secretions from the wound generally flow away at such points. As a rule, the dressing ought to be carefully inspected every day. The dressing, unless very defective, need not be entirely renewed. Fresh layers of wool should be applied at the defective points, and then be covered by a bandage applied firmly as before.

The imperfection of the dressing is not indicated only by painful sensations; elevation of temperature, and a high pulse at almost the same time attract attention. During the first days of treatment, the discharge from the wound forms, with the layers of wadding, a sticky mass, which agglutinates the skin of the limb to the enveloping layer. This is a very desirable condition, for when this agglutination is complete over the whole periphery of the limb, only filtered air can reach the wound.

This agglutination, therefore, ought to be favoured by all possible means. For this purpose it is necessary to forbid all movements on the part of the patient. In a case of amputation of the thigh the patient ought not to sit up in bed unless for indispensable requirements; and here it is necessary to remember the precaution which ought to be taken in applying the bandages at the first dressing, so as not to fix the limb in too elevated a position. If this is not done, by reason of the compression, the wadding becomes uneven, the limb sinks in virtue of its own weight, the bandage is no longer exactly applied, and air may pass under the dressing at the fold of the groin; if the patient be restless the same may occur behind at the fold of the buttocks. If, on the other hand, the limb be dressed whilst it is in the position which it will take in the habitual decubitus of the patient, that is to say, in a position almost horizontal, all these inconveniences will be avoided, and moreover this position is the best to lay the stump in after amputation of the thigh, in order to guard against projection of the femur.

The general condition of the patient whose wound has been dressed in this manner usually remains excellent; one will observe twenty-four or thirty-six hours after the operation symptoms of traumatic fever, which generally last for two or three days. So long as the patient does not suffer the dressing may be allowed to remain, but it is necessary, particularly during the early stage of the treatment, to make sure that the compression is well maintained, and, if it is not, and pus flows externally, to add fresh layers of wool and another compressing bandage. In addition the dressing should be sprinkled with carbolic acid or camphorated alcohol. Finally, when the dressing is renewed, the patient ought to be carried out of his ward—a precaution to which M. Guérin attaches very great importance.

Art. 134.—*The Science and Art of Healing Wounds.**

By Benjamin W. Richardson, M.D., F.R.S.

(*The Lancet*, February 17.)

After alluding to the great diversity of opinion existing in the profession on the subject of treating wounded surfaces, Dr. Richardson illustrated from clinical observation the results of healing, in extreme cases, by the first intention, and then he put the inquiry—Why, if in one case of the extreme kind named there could be cure by the first intention, there should not be such cure in the majority of cases—why, in short, should success by this method of cure be the exception instead of the rule? Two sets of causes stood in the way—one set remediable, the other irremediable. The remediable obstacles to recovery by the first intention were—want of care in bringing divided surfaces into perfect apposition: the too free use of water in dressing; the too prolonged exposure of wounds to the air; too much manipulation of the surface of the wound; the leaving of long ligatures within the wound; the imperfect closure of wounds from the air; the too hasty removal of dressings; and, lastly and most important of all, error of judgment on the part of the dresser in respect to the question whether there be, in the case to be treated, sufficient continuity of surface to warrant the attempt to heal by the first intention. The irremediable causes preventing healing by the first intention were—nervous lesions, influencing the vascular supply of the injured part; the accidental introduction into the wound of decomposing or other foreign matter, or the generation of organic poisonous product within the body. These causes lie apart from the science and art of dressing wounds, and may be left for a special and future discussion. For the promotion of healing by the first intention, the author contended that the dressing employed should have four distinct qualities: it should be collodial, elastic, impermeable to air, and styptic. Healing by the second intention formed the next part of Dr. Richardson's communication. Here again the rules named in relation to healing by the first intention were considered, and it was maintained that the same collodial dressing was as effective in curing by the secondary as by the primary process, the difference of application being that the whole of the exposed surface was to be treated with the collodial fluid. After giving a series of cases of rapid healing by the second intention, cases in some of which bone had been exposed, and even a joint laid open, and after touching briefly on the addition of iodine to collodial solution in some particular cases, the author placed before the Society a summary of his argument in a series of short propositions, and concluded by insisting that medical men live to cure all they can, and to try to cure everything until they succeed, through whatever tribulation they may pass in the labour.

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* Read at a Meeting of the Medical Society of London, January 29th.

Art. 135.—*On the Antiseptic Method in Surgery.*

By Dr. Paul Güterbock, of Berlin.

(*Archiv für klinische Chirurgie*, xiii. 2, 1872; *Schmidt's Jahrbücher*, No. 2, 1872.)

The author, guided by his own recent experience, discusses fully the advantages and disadvantages of Lister's dressing. To the argument used by Professor Lister against his opponents that his method has never been closely followed by them, it is a sufficient answer that he himself, since his first contribution on this method, has modified it in many different ways. Of chief consequence in this method is always the local use of carbolic acid, which produces cauterization following immediately on the injury, and continued for some time. This is proved by the early contributions of Professor Lister on this subject. For this reason German surgeons have not practised prophylactic washing out of wounds with irritant fluids, and have latterly used carbolic acid in diluted forms. Even by diluting it, and by using lac plaster, the caustic action of carbolic acid is not quite removed. Likewise, when one carries out a plan seldom resorted to by Professor Lister, and places pieces of lint, dipped in olive oil, between the wound and the carbolic paste, the caustic action of the carbolic acid cannot be altogether avoided, as this agent may flow from the paste, and become mixed with the olive oil. In the more recent modifications of Lister's process the caustic action is not so intense as it would be if applied according to the early methods. In all, however, one circumstance has to be considered, namely, that after the first cauterization with the acid the tissue-detritus thus produced form a crust, which ought not to be removed. The eschar formed by carbolic acid does not extend very deeply, and the cauterization with this acid of wounds which have been attacked by hospital gangrene or by diphtheria, has the disadvantage that after it the surgeon cannot determine with precision the extent of the disease, since the pulpy surface of a wound in a case of hospital gangrene very much resembles an eschar produced by the action of carbolic acid. The differential diagnosis can only be obtained by constant watching, by the general condition of the patient, and by other phenomena presented in the parts about the wound. Wounds treated with carbolic acid have but a slight tendency to heal, as has been acknowledged by Professor Lister himself, who has, in order at last to favour cicatrization, substituted for the antiseptic dressing some other application. This action of the antiseptic method can Dr. Güterbock confirm by his own experience. As after cauterization with carbolic acid the eschar is but slowly detached, there is but a slight tendency to inflammatory reaction, and the wound is tardy in healing. The carbolic acid does not in every case give rise to the formation of eschars; when such are not present there is superficial mortification of the tissues. This condition may be conjectured when granulations secrete but little, and when there is a tendency in the capillaries to bleed, and no progress towards healing. In a case of this kind, reported by Dr. Güterbock, all these symptoms disappeared as soon as chlorate of potash had been substituted for the carbolic acid in the dressings.

This tendency to hæmorrhages was observed oy Dr. Güterbock in wounds treated according to Lister's method, before these had reached the stage of granulation. A special objection to Lister's method is its hindrance to healing by primary intention, which may be caused by the use of a 1 to 30 solution.

After a prolonged application of carbolic acid, excoriations and eczema appear in the neighbourhood of the wound, which lesions, although they have no influence on the course of the disease, are yet very obstinate. Dr. Güterbock, after an operation for pseudarthrosis, performed according to Dieffenbach's method, in which a solution of carbolic acid (1 to 20) was used, observed that eczema persisted for some twenty-four weeks after the healing of the wound. In one case erysipelas occurred as the result of excoriations of this kind. Such instances, however, are but seldom observed. All these results, which are referred to the caustic action of carbolic acid, present in but a small number of cases any contra-indication against the use of the agent, and in the majority do not interfere with the favourable progress of wounds. But the method does not perform all that Professor Lister praises it for. In most of the cases observed by Dr. Güterbock the carbolic acid treatment did not answer to the favourable reports made on it, and imparted no protection against hospital maladies.

To prove this assertion, Dr. Güterbock brings forward thirteen tabulated cases of compound fracture, which, in the course of eighteen months, had been treated according to Lister's method. None of these cases ended fatally; in three the wound was very small; in the remaining ten cases all those bad symptoms were presented which distinguish compound, in opposition to simple, fractures, and erysipelas and hospital gangrene occurred. Of these cases there were but few which presented, at the first, any certain indications for amputation, and such cases did not become more favourable under the influence of Prof. Lister's treatment. An actively favourable influence and a protective action against hospital diseases could not be attributed to Prof. Lister's plan of dressing in any one case.

Dr. Güterbock reports the following case, which, according to Lister, would be denoted as one of acute traumatic necrosis:—

A man, twenty-nine years, received the kick of a horse over the right shin-bone, which caused a wound about one inch in length in the inner surface of the leg, extending through the soft parts, and exposing the bone. On the day after the accident there was much swelling of the injured limb, and intense fever. Incisions were then made down to the bone, and the paste and oily solution of carbolic acid were then applied instead of the previously used simple dressing. The patient progressed favourably, and at the end of a month was discharged. No exfoliation of bone took place.

Dr. Güterbock would not attribute this favourable result of this case to Lister's method, as limited injury and exposure of long bones are often healed by other plans of treatment, and here the antiseptic method was not properly or solely carried out.

Dr. Güterbock has not been able to convince himself of any striking advantage attending the antiseptic method in the opening and subsequent treatment of congestive abscesses. In his opinion, the favour-

able results obtained by Joseph in the Leipsic clinique are only seemingly opposed to this position, since in these cases no favourable influence upon the primary affection could be made out.

Relatively favourable results have been obtained by Dr. Güterbock in the treatment of wounds, and acute suppuration of joints and serous cavities. In four cases of affections of the knee-joint, he did not lose a single patient, and in all instances there was recovery with fair mobility of the limb. The same good results were obtained in two cases of suppuration of the mucous bursa over the olecranon, attended with high fever. Lesions of this kind, Dr. Güterbock allows, may be treated with success by the antiseptic method. He does not, however, inject carbolic acid into wounded joints. He has obtained similar good from the antiseptic treatment of injuries of tendinous sheaths, but has not succeeded with this method in cases of phlegmon and acute suppuration.

Dr. Güterbock has not found that the use of carbolic acid improves, as it has been stated to do by Prof. Lister and his followers, the sanitary condition of hospitals. Since the hygienic conditions of the Berlin hospital have been altered the results of treatment have been better, although Lister's method has been but seldom practised.

The statistical proofs brought forward by Prof. Lister with regard to the small number of fatal cases after amputation and resection do not prove the exclusive value of his method, since at the Berlin hospital, at a time when Prof. Lister's treatment was not heard of, just as good results were obtained as those placed to the credit of the antiseptic method. Differences in the results of treatment, such as those in the Glasgow Royal Infirmary and the hospital at Berlin, are quite independent of the antiseptic plan of treatment. It is difficult to answer even the question whether the number of such favourable cases has been much increased by the used of Prof. Lister's method.

As a positive result of his inquiries, Dr. Güterbock concludes that Prof. Lister's dressing is constantly followed by injurious results, chiefly due to the caustic action produced by every form of its application, whilst the advantages of the method are obtained only under quite favourable conditions, and with the concurrence of especially favourable circumstances, for which reason they, in themselves, are not to be undervalued. To this method is especially applicable the remark of Stromeyer, that many things seem to act as antiphlogistics that prevent the access of air and the fingers of the surgeon.

Art. 136.—*Sulphurous Acid Lotion in the Treatment of Contused Wounds.*

By John Balfour, M.D.

(*Edinburgh Med Journal*, November, 1871.)

Dr. Balfour states that an extended experience has given him great faith in this application. It gives almost instant relief from pain, controls and greatly restrains suppurative action, and where possible, secures primary union perhaps as efficiently as carbolic acid. The lotion

is of the strength of one in twelve; a thin rag (the thinner the better) should be laid over the wound, and kept constantly wet for the first thirty-six to forty-eight hours. When cold becomes less agreeable, the lotion is used tepid, the rag being wetted every twelve hours and covered with gutta-percha. Where primary union is taking place, about the third or fourth day, a dressing of zinc ointment is to be substituted for the washing: this allows the skin to heal. When suppuration is established, a zinc lotion may be used after a week or ten days, and the cure wrought out on ordinary principles. Dr. Balfour records the following amongst other cases: S. B., a lad between eleven and twelve years of age, on the 8th of June, in company with some other boys, was amusing himself with gunpowder; a "peeoge" (or devil) hung fire, and he poured some powder on it from the flask. This of course exploded, and tore open the metacarpal space between the thumb and forefinger of the right hand. The metacarpal bone of the thumb was fractured, and both wrists scorched. A mass of the short flexors of the thumb was forced out of the wound, contused, torn, and blackened. As this muscular substance was much injured and could not be returned without using undue force, a good deal of it was cut off, the wound was washed out with the sulphurous acid lotion, covered with a rag wet with the same, and the fracture was kept in position by tying the thumb to the forefinger. "Had a fair night's rest; the wrists (not complained of yesterday) now painful and beginning to vesicate; dressed with carbolic acid and oil. Everything went on well, the burns on the wrists healed kindly, suppuration was most moderate, cicatrization rapid and perfect." Dr. Balfour lately passed the boy into a public work, with a thumb very little, if at all, the worse for the accident.

Art. 137.—*Treatment of Carbuncle by means of the Hypodermic Syringe.*

(*Medical Press and Circular*, December 13, 1871.)

Carbuncles, according to the *Georgia Medical Companion*, are most safely, humanely, and more regularly treated as follows:—Introduce the canula of a hypodermic syringe into the centre of the tumour, draw out the piston, and with it will come pus, if any. The syringe is to be removed from the canula, and emptied, the canula left in, and the syringe replaced in the canula again, and the piston withdrawn, as before, as long as pus follows. When all the pus is out, withdraw the canula and apply on the tumour, externally, with a brush, the following:—℞ Collodion, ʒj; castor oil, gtt. xx.; carbolic acid, grs. v.; tannin, ℈j. Mix.

Several applications are to be made, one after the other, so that a good outer covering is obtained at once.

Art. 138.—*On the Local Treatment of Anthrax by Strapping.*

By George A. Gloag, L.K.Q.C.P., Surgeon to the Bristol Dispensary.

(*British Medical Journal*, February 3.)

In illustration of the advantages to be derived in the treatment of anthrax by strapping, Mr. Gloag quotes some details of a case that was lately under his care, in which strapping was the only local treatment adopted. J. Davis, aged fifty-two, by occupation a shop-assistant, first came under Mr. Gloag's notice on November 29th, 1871. He had been attending as an out-patient at the Bristol General Hospital for some days previously, but walking caused him so much pain that he was obliged to procure surgical attendance at his own home. He was suffering from a large anthrax on the back, its centre being situated near the inferior angle of the left scapula. The tumour presented a diameter of six inches; it was of a dusky red colour, hard, and of a circular shape. A number of small openings appeared on the surface, through which a grey-coloured substance could be discerned. The constitutional disturbance was considerable; he suffered great pain, and was unable to sleep. Mr. Gloag ordered him tonics and opiates internally, and applied the pressure-treatment by strapping, on the 30th November, and on each succeeding day, until the 23rd December, when it became no longer necessary, all discharge having ceased. Each time the strapping was applied a quantity of tenacious yellow matter was pressed out of the little openings on the surface. These openings had no tendency to coalesce, as is often the case, and no more integument was ultimately destroyed than a sixpence would cover.

The advantages of the pressure-treatment of anthrax, over incision or cauterization, are, that it is safer and more rapid; prevents to a great extent, the destruction of integument; and is more agreeable to the patient. Mr Gloag believes the action of strapping to be two-fold; firstly, it acts like the pressure-treatment of orchitis, by emptying and supporting the vessels; and secondly, by pressing out the peculiar exudation, which closely resembles slough, but which it can hardly be, because it is circumscribed, and quite free from unpleasant smell. This mode of treatment, to be of use, must be fully carried out; the sides of the anthrax must be drawn together by broad strips of sticking-plaster, with all the force that the surgeon can exercise or the plaster will bear. Nothing less is of any utility. The mode of strapping a large anthrax is to cut the plaster in strips about two feet long—one half of each strip being about two inches wide and the other about an inch and a half. These are applied in pairs, by making the broad ends adhere to the skin on opposite sides of the anthrax, in such a manner that, when the narrow ends of the plaster are joined together, they shall pass over the tumour, the narrow part of one strip of plaster meeting the edge of the broad part of the plaster of the opposite side, thereby giving the appearance as if one strip of plaster three inches and a half wide had been applied. About eight of these strips are to be thus put

on, so that they shall present a stellate arrangement, with the centre corresponding to the apex of the tumour. The anthrax will require to be dressed every day; the strips of plaster are to be removed, and the part sponged with warm water, to remove any discharge that may have exuded from the small openings on its surface; after which Mr. Gloag has found it advantageous to rub the surrounding skin with a little lint dipped in turpentine, to remove any sticky matter that adheres to it from the plaster. The pain which the strapping causes at first is soon succeeded by a feeling of comfort and support.

Art. 139.—*Galvanic Treatment of Bed-sores and Indolent Ulcers.*

By William A. Hammond, M.D.

Dr. Hammond, of New York, recommends for indolent ulcers and bed-sores, the galvanic treatment as first suggested by Crussel, of St. Petersburg. He says:—"During the last six years I have employed it to a great extent in the treatment of bed-sores caused by diseases of the spinal cord, and with scarcely a failure; indeed I may say, without any failure, except in two cases where deep sinuses had formed, which could not be reached by the apparatus. A thin silver plate—no thicker than a sheet of paper—is cut to the exact size and shape of the bed-sore; a zinc plate of about the same size is connected with the silver plate by fine silver or copper wire six or eight inches in length. The silver plate is then placed in immediate contact with the bed-sore, and the zinc plate on some part of the skin above, a piece of chamois-skin soaked in vinegar intervening. This must be kept moist, or there is little or no action of the battery. Within a few hours the effect is perceptible, and in a day or two the cure is complete in a great majority of cases. In a few instances a longer time is required. I have frequently seen bed-sores three or four inches in diameter, and half an inch deep, heal entirely over in forty-eight hours. Mr. Spencer Wells states that he has often witnessed large ulcers covered with granulations within twenty-four hours, and completely filled up and cicatrizations began in forty-eight hours. During his recent visit to this country I informed him of my experience, and he reiterated his opinion that it was the best of all methods for treating ulcers of indolent character and bed-sores."

Art. 140.—*Three Cases of Traumatic Tetanus.*

By J. Fayrer, M.D.

(*Indian Medical Gazette*, February.)

Dr. J. Fayrer records three cases of traumatic tetanus; one resulting from lacerated wound of right great toe, the second from a wound of the left index finger, and the third from wound on dorsum of right foot. Cases one and two recovered from well-marked symptoms

of the disease after amputation of the wounded part in which the disease originated. In the third case, removal of the cicatrix was not successful, the disease progressed, and the patient died.

In two cases there could be no doubt, Dr. Fayrer says, that the origin of the disease was completely removed, for as the wound was situated on the digitis, and those parts were amputated, the injured afferent nerves—viz., those which conveyed the evil influence to the nerve centres, were necessarily divided. The source of disturbance being removed, the symptoms subsided, and the patients recovered. Dr. Fayrer has, on a former occasion, recorded a similar case in which a favourable issue resulted, and those now noted tend to prove that if the part whence the irritation sets out, and which, if allowed to remain, excites that peculiar polar condition of the cord which results in the waste of nerve force, tetanus, be removed early, the perturbation, though great, is not necessarily permanent, and may subside.

Though no one would hesitate to amputate a finger or toe in such a case, most would hesitate to apply the same treatment in the case of a limb, until the symptoms of tetanic spasm became so severe as to leave no doubt as to the greater danger incurred from the disease: unfortunately it is then too late; the disease is thoroughly established, and amputation is as powerless to remove the results as any other remedy.

In so desperate a disease as traumatic tetanus, the most desperate remedies are justifiable, and Dr. Fayrer suggests the advantage of resorting to amputation, even of a leg, on the earliest invasion of the symptoms.

Amputation, the author is quite aware, has often been practised and with unfavourable results, but he is inclined to believe that it has not, as a general rule, been resorted to early enough to give it a fair chance of success.

No one would recommend amputation of the limb if the peccant nerve could be isolated and divided, as in the case of that leading from a finger or a toe.

In a wound of the leg or arm it is almost impossible to indicate the branch or trunk that is the conductor of mischief to the centre; and therefore to secure its division the whole limb must be removed.

The hydrate of chloral may have had something to say to the recovery in these cases, but Dr. Fayrer has not found it successful, except as euthanasia, in these cases.

Art. 141.—*On the General Diagnosis of the Syphilitic Chancre.*

By Dr. A. Fournier.

(*Union Médicale*, No. 57, 58, 59, 63, 1871; *Annales de Dermatologie et de Syphiligraphie*, No. 3, 1872.)

The following statements, which sum up a recent contribution from M. Fournier, add to this diagnosis several elements which every pathologist, anxious to keep up with the stream in science, and to main-

tain his science at the level of the hygienic and social questions which affect this subject, ought henceforth to take into serious consideration:—

This diagnosis is a problem which it is sometimes easy and at other times difficult to solve; but it is always a problem, for from its solution may be derived a most serious prognosis with regard both to therapeutical indications and to very important medico-legal conclusions.

The diagnosis of *nascent chancre*—that is, of chancre observed at its embryonic stage, is impossible. At this period there is nothing more than an erosion, which may resemble any possible form of erosion; it does not present a single character by which it may with certainty be diagnosed from a scratch, or from any slight injury of an *erosive* or ulcerative form; the chancre may be particularly confounded either with simple, traumatic, or inflammatory *erosion*, or with herpes.

There are but two signs which differentiate chancre from erosions, but these are demonstrative: *induration* and *adenopathy*. All other diagnostic elements have nothing fixed or constant.

1. In dealing with a chancre one may almost always find at its base a certain resistance or hardness. When slight this constitutes an index; when well-marked it justifies the suspicion of a chancre.

2. The absence of glandular engorgement, at a period when the lesion is well declared, permits one to reject confidently the idea of a chancre. In the presence of a *glandular pleiad* it will be quite otherwise, as a chancre alone can excite a glandular reaction of this kind.

Whenever the lesion under examination has already been treated and cauterized, the surgeon, in his diagnosis, ought not to take the subchancrous induration into account; ordinary forms of erosion often become hard in a surprising manner, simulating the most marked syphilitic indurations, and deceiving on this point the most experienced surgeons.

The form of herpes which is susceptible of being confounded with chancre is not the vesicular herpes, nor the herpes with miliary erosions consecutive to the rupture of isolated vesicles; it is the confluent chronic or chancre form of herpes.

Three almost constant signs may serve as a basis for the differential diagnosis of chancre and herpes: 1st, the condition of the glands; 2nd, induration; 3rd, the circumferential tracing of the lesion.

1. *Condition of the Glands.*—With chancre there is constantly an indolent, hard, and persistent adenopathy. With herpes there is no glandular reaction, or, at the most, a slight sub-inflammatory tension of the glands.

2. *Induration.*—In chancre there is a constant, or almost constant, induration, varying in degree. In herpes the base of the sore is supple and not indurated.

3. *Circumferential Tracing of the Lesion.*—The contour of the chancre is represented either by a circle of a certain diameter, or by a more or less regular oval, or by some non-geometrical, irregular form. In herpes one may observe around the erosion small circumferential segments of very irregular design.

This last character is pathognomonic of herpes; it is due to the fact that the whole sore in herpes results from the fusion of several

small absolutely circular sores. This character is not met with in chancre, which is developed as an isolated and not a grouped lesion.

But the ulterior evolution of the lesion will always be the criterion *par excellence*. If the case be one of herpes the lesion is soon repaired, and cicatrizes readily. If one has to deal with chancre, the duration of the sore will be longer, at least this is so in the majority of cases. It will acquire characters which will become more and more marked, and adenopathy will be established in an unequivocal manner. Finally, all doubt, if any then remain, will be removed some weeks later by the appearance of constitutional symptoms.

A cause of error to be avoided, and one which has not hitherto been pointed out, is *the possible co-existence of both lesions*, herpes and chancre, on the same subject, in the same situation, and at the same time. This co-existence is frequent in the female, and I have often had occasion to observe syphilitic chancres, at the edges of which were radiating groups of herpetic sores, or, again, disseminated and confluent herpetic erosions, in the midst of which was a true chancre.

Erosive vulvitis also is sometimes confounded with chancre. This affection, which is more frequent in infancy than at any other period of life, can generally be distinguished very easily from chancre by the following characters: the erosions most frequently are multiple and superficial; there is general redness of the affected parts; the labia are swollen and œdematous; there is abundant suppuration of a blennorrhagic character, and the whole region is painful. Sometimes, however, the lesions which cause this form of vulvitis may very much simulate chancre, and for some days deceive a practised eye.

It is especially important to distinguish syphilitic chancre from the exuberative or ulcerative form of simple chancre. This point of differential diagnosis is of the highest importance.

According to M. Fournier the clinical elements of this diagnosis are the following:—

Simple Chancre is generally multiple, and often even confluent. This occurs notedly in the female, where it is a rare event to find but *one* simple chancre. This lesion is a true excavated ulcer, with abrupt, sharply-cut edges, which are often undermined. The base is unequal, anfractuous, and has a worm-eaten appearance. It is of a clear and bright yellow colour. From it there is an abundant secretion of true pus. The base is supple and soft, and presents only a diffused inflammatory resistance, and a pasty, œdematous hardness, resembling that of the base of a boil. There is no glandular reaction, but rather an acute inflammatory bubo, which generally suppurates, and is converted, after the discharge of the pus, into a true glandular chancre. The pus from a simple chancre can be inoculated on the same patient.

Syphilitic Chancre.—Often unique, rarely multiple, never confluent, it is more frequently a simple erosion than an ulcer, and is generally less excavated than the simple chancre. It has no distinct edges, but an adherent contour, often raised *en couronne*, forming a circular roll. The base is smooth and shining. The coloration is greyish, or brownish red, similar to the tint of muscle. The secretion is scanty and serosanious rather than purulent. The base is more or less indurated; the hardness, when deep-seated, being knotty and circumscribed; when superficial recalling the consistence of parchment. This induration is

limited to the base of the chancre, and ceases suddenly, thus affording a sensation *sui generis* which reminds one of the dry and hard feeling of cardboard or of cartilage, and very different from the pasty hardness of inflammation, or of œdematous engorgement. The adenopathy, which is constant and necessary is indolent, aphlegmatic, hard, and generally polyglandular. The secretion from a syphilitic chancre is not inoculable on the same patient.

Finally, the *ulterior evolution* is, in doubtful cases, the sole element which clears up all doubt. The surgeon who is so bold as to diagnose a syphilitic chancre from the ulcer alone, without waiting for the remote and ulterior evolution, commits a most blameable act of imprudence. This conception of the ulterior evolution will, in certain special diagnoses, be the indispensable and obligatory controlling test of the opinion formed concerning the nature of the primary affection.

In the presence of lamentable errors and confusions, which have been recorded in scientific annals, and which have been often made by learned, skilled, and cautious clinical observers and by consummate masters of this kind of diagnosis, M. Fournier has laid down the following conclusions :—

1. The diagnosis of a chancre from a chancre alone, especially in the female, is liable, even in the hands of masters of the art, to be attended by so many surprises and errors, that it ought not to be formulated without reserve or appeal.

2. The absolute diagnosis of chancre—and such ought to be medico-legal diagnosis of this lesion—cannot and should not be established except on these two bases: the chancre on the one hand; and on the other, the ulterior evolution; that is to say, the constitutional affections which, after a short interval, succeed the chancre.

Art. 142.—*Three Cases of Traumatic Tetanus Cured by Chloral and Warm Baths.*

By Dr. G. Lavo.

(*Annali di Med.*, February; and *The Lancet*, March 30.)

Dr. G. Lavo publishes these three cases. They were observed almost at the same time at the Hospital of Brescia, and had a very favourable issue. The first case was a man of twenty-six, who met with lacerated and contused wounds of the scalp. The lesser ones healed in a few days, and the more extensive wounds in a fortnight. At that period difficulty of deglutition occurred, and soon the tetanic symptoms made their appearance. Chloral was first given by the mouth, and warm baths (99° to 100° Fahr.) repeated night and morning. Hypodermic injections of the same substance were soon had recourse to, and the chloral was alternated with laudanum, the warm baths being regularly and daily persevered in. On the thirteenth day the improvement was considerable, and after the application of a few leeches to the anal region, the patient was discharged in excellent condition. He had taken about eight ounces of chloral, and used twenty-five baths.

The second patient was twenty-one years old, and showed symptoms

of tetanus a fortnight after a contused and lacerated wound of the foot. Woorara was first used at the patient's residence, but failed; and he was received in hospital fifty days after the infliction of the wound, and thirty-five after the first appearance of the tetanic symptoms. Ordered ninety grains of chloral, and a hot bath. These means were continued for a fortnight, with an occasional enema; and the patient was discharged cured after having taken some ferruginous cod-liver oil. He had taken altogether about six ounces of chloral and used fifteen baths.

The third patient was a man of forty-two, who met, by the falling of a stone, with a contused and lacerated wound of the foot. The tetanic symptoms appeared twenty-five days afterwards, and the man being removed to the hospital the same treatment was adopted which had proved so beneficial in the first two cases. In this instance, however, hypodermic injection of seven grains of chloral was used concurrently with the internal administration of the same. In about thirteen days the improvement was manifest, and the patient, who had seen the recovery and exit of his two companions in misfortune, could be kept in hospital no longer, and furtively left the institution.

Art. 143.—*On the Use of the Bavarian Apparatus in the Treatment of Fractures.**

By Anthony H. Corley, M.D., Queen's University, Ireland, F.R.C.S.I., &c.

(*Medical Press and Circular*, Feb. 14.)

Some months ago Dr. Corley introduced a new method of treating fractures of the long bones. An apparatus which enables us to dispense with the use of splints, which permits us to inspect daily, if necessary, the state of the fractured limb, and which allows the patient to escape the wearisome necessity of six or eight weeks unchanging "dorsal decubitus," must quickly, when properly understood, supersede for ordinary cases every other method of treatment.

The appliances are few and inexpensive. A yard of the cheapest flannel, a pound or so of plaster of Paris, a few large pins with their heads bent, and a piece of calico or common roller make the surgeon independent of the surgical-instrument maker. The flannel is cut into two rectangular pieces the length of the fractured bone, and broad enough to encircle the limb and to leave a margin. One is a little wider than the other. Placing the narrow one evenly over the other they are sewn together by longitudinal stitching down the mesial line. They now resemble two sheets of note paper stitched together at the fold, the outer a little larger than the inner.

Raising the fractured limb carefully, the flannel is to be spread smoothly under it, taking care that the line of sewing corresponds to the posterior mesial line of the limb. The two ends of the inner sheet are now brought evenly over the limb and fastened together by means

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* Read before the Surgical Society.

of the bent pins, leaving the two outer half sheets spread on the surface of the bed. By extension, counter-extension, and manipulation, exact coaptation is secured, and now the plaster, mixed to a proper consistence with water, is partly smeared and partly poured on. The two outer sheets of flannel are rapidly brought over the surface of the plaster (which is now caught on both sides between the inner and outer layers) and are held together at their margins till the plaster sets, taking care that the extension and counter-extension are kept steadily up during that period. The pins must now be taken out (and it is for this purpose that their heads are bent), the edges trimmed, a few turns of the roller now being applied, and the entire operation, which does not occupy ten minutes, is finished. Muscular spasm at once ceases, the patient acquires the power of shifting his position, and a steady equable lateral pressure is secured, adapted exactly to the shape and inequalities of the limb.

Should it be necessary to maintain any peculiar position, as in the treatment of Pott's and Colles's fracture, the assistant holds the limb while the plaster is setting, and a firm rigid case is at once secured, exercising uniform pressure, incapable of slipping, and maintaining the fractured ends in steady apposition. But the most important advantage connected with this apparatus is the facility with which it may be taken off. Most plaster and starch bandages are not only troublesome to apply, but so difficult to remove, that there is a strong natural tendency on the part of the surgeon to leave them on, and trust that the bones are uniting properly.

Art. 144.—*Removal of Corns.*

(*Edinburgh Medical Journal*, June.)

Hard corns may be carefully picked out by the aid of a small sharp-pointed scalpel or tenotomy knife, and if well done the cure is often radical, always perfect for the time. But they may be equally successfully removed by wearing over them for a few days a small plaster made by melting a piece of stick diachylon (emplastrum plumbi), and dropping it on a piece of white silk. The corn gradually loosens from the subjacent healthy skin, and can be readily pulled or picked out. Soft corns require the use of astringents, such as alum dissolved in white of egg, or the careful application of tincture of iodine. Prevention, however, is in regard to them better than cure, and can be readily attained by daily friction with cold water between the toes.

Art. 145.—*On the Influence of Age on the Choice of Methods of Treatment in Surgical Affections.**

By M. Gosselin.

(*Gazette Médicale de Paris*, No. 15, 1872.)

"It is my intention to point out here the influence exercised by the

* Communicated to the Académie des Sciences.

age of the subject on the choice of methods of treatment in the surgical affections of adolescents, and I propose, in order to determine this choice, that I should be guided by the following formula.

"The special spontaneous surgical affections of young people have a tendency to endure, to extend, or to relapse as long as adolescence lasts. When once adult age has been attained these tendencies are lost.

"Let us now examine the application of this formula to the treatment of the spontaneous affections peculiar to adolescence.

"1. For *ingrowing nail* many methods of treatment have been recommended, and surgeons are always ready to find some fresh plan, as those at present practised are followed so often by relapse. But this tendency to relapse is due to the fact that the patient is young and preserves the special pathological aptitude in virtue of which the affection was first produced. For my part I have not had occasion to observe a relapse after the age of twenty-five years, from which I conclude that whilst every care ought to be taken to avoid the return of the affection, one cannot expect to obtain a definite and certain cure by any kind of proceeding until the patient has reached the age of twenty-three or twenty-four years.

"2. In *painful valgus*, which I have also called tarsalgia, I have established that this affection is due to a special arthro-ostitis of the tarsus, developed in consequence of increased growth of this part of the skeleton, and the capital indication in the treatment of which is to relieve the pain of locomotion and the concomitant contractions of the muscles of the leg, and, by removing these, to prevent a termination in muscular contraction—permanent valgus and anchylosis. The best means for obtaining this result are: rest, an immovable apparatus, and sometimes section of the lateral peroneal tendons and electricity. But whilst the subject is young a relapse is not always inevitable. When it has taken place, one ought to return to the employment of similar means, and not to conclude too rashly that the affection is incurable. By persevering in the treatment until the patient has attained adult age one may guard him or her from the deformity and consequent infirmity which would always take place whenever the affection is left to itself.

"3. In *acute suppurating epiphysial ostitis*, whenever it is not so intense as to necessitate a primary amputation or to cause death, and when it has terminated in long-continued necrosis, I do not advise early recourse to amputation. For in cases of this kind I have seen the necrosis subside, and a definite cure take place in patients who, after arriving at their twenty-fifth or twenty-sixth year, had lost the predisposition to suppurating ostitis, which was a consequence of early age and of aberration of nutrition at the period of the union of the epiphyses.

"4. With regard to *epiphysial exostosis*, experience has taught me that this tumour ceases to grow and to be painful when the patient has passed out of the period of adolescence. As ablation is a dangerous operation, I think it better to temporize in cases of this kind, and to leave the disease to itself.

"5. In *sub-ungual exostosis* of the great toe, an affection where, in consequence of the trouble and pain it causes, it is necessary for the surgeon to intervene, the objection made to the majority of methods of

ablation is again the occurrence of relapse. But here, as with the ingrowing nail, although relapses may have taken place whilst the patient was young, I have seen the affection subside after the adult period had been attained.

" 6. But the consideration of age has capital consequences, especially in cases of *large naso-pharyngeal fibrous polypi:* growths which, on account of their dimensions, cannot be treated even in a palliative manner without a preliminary operation, which opens up a passage towards their points of implantation. I reject resection of the superior maxillary bone, because it endangers life, and leaves mutilation of the face, without protecting the patient absolutely from relapse. I prefer dividing the velum palati and the palatine arch according to M. Nélaton's method, and I restrict myself to making only palliative operations of incisions and cauterization, in order to preserve the life of the patient until the epoch of adult age, when he will have lost, according to every probability, his predisposition to the growth and reproduction of his tumour. This precept, which has been already formulated by M. Legouest, was applied, with great apparent success, to a young man, the treatment of whom I commenced when he was twenty-two years of age, and in whom death from suffocation was prevented by a partial excision made after the division of the palatine arch, and who, after contending for fifteen months against incessant relapse, was finally freed of his tumour. This disappearance took place in February, 1871, and promises to be permanent."

Art. 146.—*On the Anatomical Changes that are Produced in the Spinal Cord after Amputation of a Limb or Section of the Nerves of this Limb.**

By M. A. Vulpian.

(*Gazette Hebdomadaire*, No. 10, 1872.)

" Total or partial amputation of a limb in man determines remarkable changes in the region of the spinal cord, from which are derived the nerves supplying the amputated part. These changes consist essentially in a diminution, in every sense, of the dimensions of the corresponding half of the cord in this region, contrarily to what I remarked concerning the first cases which I examined, and conformably to what has been pointed out by Dr. Dickenson. The region which undergoes these changes in the greatest degree is the posterior parts of the spinal cord; that is to say, the posterior horn and the posterior column. This diminution in every sense of the dimensions of the altered parts is not due to an actual morbid change of the structure; there is neither interstitial myelitis nor granulo-fatty atrophy of the constituent elements of the tissue of the spinal cord. In some quite exceptional cases, the interstitial tissue of the altered posterior column is slightly hypertrophied. Perhaps in those cases there had for a long time been violent pains in the stump. As a general rule, one observes simple atrophy, that is to say, a reduction of the diameter of the elements, principally the nervous tubes.

* Communicated to the Académie des Sciences.

"The changes produced in the spinal cord after amputation have been observed not only when the amputation had been performed before the period of the arrest of the body's growth, but also after it had been performed in adult life, and even in old age. The changes, however, are the more rapid, and the better marked as the period of life is less advanced. For these changes to become very manifest in adult age, an interval is always necessary of several months at least between the day of the operation and the time of death.

"It will be asked if the local atrophy of the cord, in cases of amputation, be due principally to the section of the nerves made during the operation. In order to clear up this point, it is necessary to cut the nerves of a limb, leaving the other parts. I have made sections of the greater sciatic nerve on one side, and sometimes also of the crural nerve on the same side, in various animals (dogs, rabbits, guinea-pigs). After varying intervals I examined the dorsal and lumbar regions of the spinal cord in these animals. Two or three months after the operation, and in young rabbits even thirty-six days, I made out an atrophy of the corresponding half of the cord in the region corresponding to the roots of the divided nerves, and this atrophy presented the same characters as that observed in man after amputation. This local atrophy of the corresponding half of the cord is then in most, if not all cases, due to section of the nerves of the amputated limb."

ART. 147.—*A Case of Sudden Death after an Operation.*

By Dr. H. FISCHER, of Breslau.

(*Berliner klinische Wochenschrift*, viii. 24, 1871; *Schmidt's Jahrbücher*, No. 10, 1871.)

Chloroform does not prevent shock. This fact is of importance in considering cases of sudden death after operation with administration of chloroform. In the following case chloroform was clearly not the cause of death.

Dr. Fischer performed resection of the left upper jaw for the removal of a giant-cell sarcoma. The patient, who was a man aged fifty-six years, had been much exhausted by long-continued pain, and by a prolonged treatment with iodine, and by mercurial inunction applied under a mistaken notion that the disease in the jaw was due to syphilis. He had frequent attacks of syncope. On examination of the chest, the heart was found to be intact. The patient was allowed to take but a few inhalations of chloroform, and just enough to reduce the pain attending the incision of the skin and the dissection of the soft parts. After the preliminary stages of the operation had been completed, the patient was quite aroused from his light sleep, and uttered loud cries. Chloroform was not administered again. The operation was performed rapidly, and without any interruption. There was not very great loss of blood. When the jaw was removed the patient suddenly collapsed; the face became pale, and the skin cool; the pulse ceased, and the respiration was very irregular. No stridor was audible, and no

cyanosis was recognisable. A prolonged pause in the respiration was followed by some deep and prolonged inspirations. Next the beats and sounds of the heart suddenly ceased. Artificial respiration was then carried into practice, and, although no signs of suffocation were present, tracheotomy was performed. After a few short respirations unmistakable signs of death came on. On the post-mortem examination all the organs were found intact; the brain was anæmic; the heart quite empty; and the liver, spleen, and kidneys congested. Without doubt the patient died from shock.

SECT. II.—SPECIAL QUESTIONS IN SURGERY.

(A) CONCERNING THE HEAD AND NECK.

ART. 148.—*Treatment of Conical Cornea by Removal of the Top of the Cone.*

By C. BADER, Ophthalmic Assistant-Surgeon, Guy's Hospital.

(*The Lancet*, January 20.)

The favourable results obtained by the operation of removing the top of the cone in conical cornea induces Mr. Bader to publish several cases. The first case was operated on in 1863.* Since then, up to August, 1871, nine cases have been treated in the same manner: in seven cases the left eye, in one the right, and in one both eyes were operated on.

"1. *The operation.*—Place the patient on a bed as for extraction of cataract, and bring him thoroughly under chloroform.

"2. Keep the eyelids open with a stop-speculum, so as to press upon the eyeball as little as possible, and fix the eyeball with the forceps.

"3. Immediately before commencing the operation, ascertain the position of the top of the cone by turning the eye to be operated on in different directions, while strong light is thrown upon the cornea with a two-inch convex lens.

"4. The subsequent steps of the operation, however they be taken, should tend to remove the top of the cone (the entire thickness of the cornea), so as to cut an opening through the cornea into the aqueous chamber. This opening, somewhat oval-shaped, is from one-twelfth to one-sixteenth of an inch in its longest diameter; it was measured immediately after removal of the apex of the cone, after escape of the aqueous humour, the cornea having collapsed and being in contact with the iris. The pupil, in all cases, was opposite the opening in the cornea: the surface of the lens could be seen bulging into the area of the pupil. In the cases in which the thread was used, the latter caused an indentation in the crystalline lens while passing across the area of the pupil.

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* See page 192 of author's book on the "Natural and Morbid Changes of the Human Eye."

"5. *Removal of the top of the cone.*—A small curved needle, armed with fine white or black silk or with silver wire (or a gilded, small, sharp hook), is thrust through the cornea in its horizontal diameter, close to the portion of cornea we wish to remove. The point of the needle, after piercing the cornea, is carried horizontally across the aqueous chamber to a spot opposite the point of entrance, and again thrust through the cornea close to the portion of cornea we intend to remove. The aqueous humour escapes before or after passing the point of the needle through the cornea the second time. The needle or sharp hook is left in the cornea until the top of the cone has been removed; it helps to protect and keep back the crystalline lens. The portion of cornea (the top of the cone) situated in front of the needle is then removed as best we can. This part of the operation is somewhat difficult, the cornea being transparent or nearly so, extremely thin and flaccid, and the iris and lens being in contact with the cornea. The head of the needle is held in one hand, and with a cataract-knife, or with a sharp, narrow, lancet-shaped knife, an incision is made through the cornea (small flap incision, as in flap extraction for cataract). Having made the incision, the needle is let go, the small flap seized with an iris-forceps, and the rest of the cornea (of the cone) removed with the knife or with scissors.

"6. *Closure of the wound (opening) in the cornea.*—If a sharp hook or a needle without thread has been used for transfixing the cone, it is withdrawn after removal of the cone, and the wound left open. The eyelids of both eyes are then closed, kept bound up and cool with wet lint, and the patient kept in bed for three days; on the third day the use of the eye not operated on is permitted, while the eye operated on is kept bound up until all redness has subsided. If a needle, armed with silk thread, has been used, the needle, after removal of the cone, is drawn out gently by the second opening in the cornea; so that the thread, while passing across the aqueous chamber, the surface of the iris, pupil, and crystalline lens irritates those parts as little as possible. The opening in the cornea is closed by tying the thread, as is done when uniting the margins of a wound by a suture. The suture is tied tightly. If it should give a little before completing the knot, it does not signify. The cornea, by closing the suture, is thrown into numerous folds. This folded condition continued in an extreme degree in one case for nearly four weeks. Having united the wound, one end of the thread is cut off close, the others left about a quarter of an inch long, so as to assist when removing the suture. Both eyes are kept cool and bound up with wet lint. The patient remains in bed. The suture is removed on the appearance of slight chemosis and swelling of the eyelids.

"7. *Removal of the suture.*—The patient being rendered insensible (by methylene), the lids are kept open without pressing upon the eyeball, the surface of the cornea is well cleared from mucus, &c., and the long end of the suture drawn away from the cornea, so as to stretch the suture, and the latter cut through and withdrawn. After this, the lids of both eyes are again carefully kept bound up with wet lint. The use of the eye not operated on is permitted on the third day after removal of the suture. The operated eye is kept bound up, and the lint

cool, until all redness of the eyeball has subsided, or nearly so, when an artificial pupil is made.

"8. Any other mode of destroying the apex of the cone in conical cornea —for instance, by the galvanic cautery—would, I believe, answer as well as abscission of the cone.

"*Disadvantages of the operation.*—An opaque spot in the cornea, from where the cone had been removed, The patients were told that there would, after the operation, remain a small white speck on the eye, but that nothing except an operation could improve sight. None of the patients complained of the disfigurement, and all were pleased with the amount of vision obtained.

"The necessity of giving an anæsthetic repeatedly. For removal of the suture, and for the artificial pupil, methylene is quite sufficient.

"*Advantages of the operation.*—In extreme cases of conical cornea a greater improvement of sight is obtained than by any of the known modes of treatment.

"No untoward accident occurred in any of the cases.

"The after-treatment, after the removal of the suture, is very simple. The patient need only be seen at great intervals.

"The conical cornea in all cases completely disappeared, and gave way to an abnormally flat cornea."

Art. 149.—*Ten Cases of "Ulcus Corneæ Serpens."*

By E. Williams, M.D., Cincinnati, Ohio.

(*Cincinnati Lancet and Observer;* and *The Medical Record,* December 15, 1871.)

Dr. Williams describes ten cases of this form of ulcerative keratitis, and the treatment by incision, which was first described and practised by Sämisch. He remarks, in closing, that this operation proposed by Sämisch far excels all other modes of treatment on record. The importance of the operation does not simply consist in the restoration of the diseased or injured organ to useful vision, but in warding off the glaucomatous process, which is frequently set up in an eye with a clouded pupil. It must also be remembered that by preventing adhesion between the iris and capsule of the lens, and between the iris and cornea, &c., sympathetic ophthalmia is also avoided.

In the performance of the operation the best instrument for transfixing the base of the ulcer is, in most cases, a narrow Graefe's cataract-knife. In some cases, however, the chemosis of the conjunctiva so flattens the cornea that a straight knife cannot be conveniently used. In such cases a narrow sickle-shaped knife is far better.

Art. 150.—*On Cachectic, or so-called Syphilitic Keratitis.**

By M. Panas.

(*Gazette Hebdomadaire*, No. 45, 1872.)

"In 1857 Mr. Hutchinson endeavoured to connect this form of keratitis with hereditary syphilis. In 1859 and 1860 this author furnished fresh proofs, and in 1863 he published a memoir in which he discussed the affection in all its details. The following, according to Hutchinson, are the principal characters of the keratitis in question: A finely spotted interstitial clouding of the cornea, which proceeds from the centre to the circumference, and finally gives to the whole of the cornea the appearance of ground glass; very fine radiated vascularity at the periphery of the membrane; both eyes are attacked in succession; the progress is slow. The proofs given by the author in favour of this affection being a manifestation of hereditary syphilis, are the following: a peculiar physiognomy in the patients; cicatrices or old fissures at the angles of the mouth; sinking of the bridge of the nose; a row of permanent teeth remarkable for their small size and bad colour, the two superior incisors being frequently notched at their free border; great mortality among the children of the same family. In 19 cases out of 30 one or both of the parents had had syphilis before the birth of the affected child; in 32 cases out of 38 the affected children had had infantile syphilis. Whilst swelling of the lymphatic glands is rare, nodes, ulceration of the velum palati, and lupus are frequent complications of this form of keratitis.

"Cases of this affection were subsequently published by Stanley, Teale, Lawrence, Watson, Taylor, and Haller, all of whom agreed in the views of Mr. Hutchinson. Mooren, on the other hand, denies that there is any relation between the peculiar conformation of the teeth described by Mr. Hutchinson and this form of keratitis.

"Before giving my opinion I will relate the cases which I have observed.

Case 1.—Joseph B., aged twenty-one years, a sweeper, of small stature, was admitted into the St. Louis Hospital on February 13, 1866, with an affection of the eyes. The head was square and the forehead large, the jaw was badly developed, and the teeth were small, black, and without any special notch on their crowns. A model of the jaw proved that the case was one of rachitic change of the teeth without traces of notching. Instead of sixteen teeth the jaw carried but nine—four incisors, two canines, three small molars. The skin of the face was dark and rough, the nose flat, the eyes small, and the hair scanty. No cicatrices or eruption upon the skin, no glandular enlargement. Until this attack the patient had never had any affection of the eyes. No syphilitic antecedents either in the patient or in his parents. Has one brother, who is in good health.

About a month before admission sight commenced to fail, six days previously the left eye became red and painful. There is now some conjunctival congestion, with a pericorneal vascular circle encroaching on this membrane over an extent of three millimetres. This circle is made up of very fine

* Communicated to the Société de Chirurgie of Paris.

rectilineal vessels siuated in the thickness of the cornea under the epithelial layer, probably upon the membraue of Bowman. The whole cornea, and especially its central and upper parts, is the seat of an interstitial opacity which gives it the appearance of ground glass. With oblique illumination may be observed a punctated exfoliation of the epithelium of the anterior surface of the cornea. In short, we find all the symptoms of diffuse or interstitial keratitis attributed by Hutchinson to hereditary syphilis. The pupil is not perceptible, so an ophthalmoscopic examination is impossible. Vision is reduced to a simple perception of light. The patient complains of slight circumorbital pains; there is very little of photophobia and lachrymation. The eyelids are sound.

The right eye does not seem to be affected. With oblique illumination, however slight, clouding may be perceived in the centre of the cornea. During the first month of treatment I employed, but without success, calomel in small doses, and afterwards an atropine collyrium. I then prescribed iodide of potassium, of which two grammes daily were first taken and subsequently four grammes. The cornea soon cleared and became free of vessels : at the end of the second month the patient was cured. On the day of his discharge the left eye presented no traces of vascularization and there was but an almost imperceptible clouding at the centre of the cornea : the patient could read No. VII. of the Giraud-Teulon scale. The pupil was normal and the fundus of the eye free from disease.

Case 2.—Eugénie L., aged eighteen years, was admitted on May 15th, 1869. This was the first ocular affection that she had had. She was of lymphatic temperament, but not scrofulous. About six weeks before admission the right eye became rapidly clouded, but without any pain, and three weeks later the left eye was similarly affected. The right cornea is now much clouded, and at its periphery there is fine and radiated injection. The patient can scarcely distinguish No. VI. of the Giraud-Teulon scale at the distance of one foot. In the left eye there is a similar clouding of the cornea and more vascularity ; there was very little photophobia. Treatment : two grammes of iodide of potassium daily. On July 19 the patient was discharged quite cured.

Case 3.—Alexandre D., aged twelve years ; constitution very feeble, free from syphilis and scrofula. The teeth are long, white, and regular. This lad has double diffuse keratitis ; the aspect of the two corneæ is characteristic. Two grammes of iodide of potassium were administered daily. At the end of six weeks the corneæ were clear and the patient could read No. IV. of the Giraud-Teulon scale.

Case 4.— — Bauer, a female, twenty-five years of age ; double diffuse keratitis ; has frequently suffered from bad eyes. Can neither read nor work. Incisor teeth normal. No syphilitic antecedents.

"These observations contradict the ideas held by Mr. Hutchinson; in no case did the teeth present the conformation described by this surgeon. I never found in my patients any antecedent of syphilis. I have seen too many syphilitic patients at the Louvaine and Midi to admit that hereditary syphilis may manifest itself tardily at the age of twelve, twenty-five, and thirty years, and when nothing has appeared during early infancy. Mackenzie was in the right when he described this kind of disease under the title of chronic scrofulous keratitis ; it is necessary, however, to remark that the patients do not present the apparent signs of scrofula.

"To resume: Firstly, the syphilitic origin of diffuse keratitis, described by Hutchinson under the title of syphilitic keratitis, may be doubted ;

secondly, the abnormal configuration of the teeth is far from constant, and, when it does exist, recalls altogether the condition of rachitic teeth; thirdly, the name of cachectic keratitis is best fitted for this affection; fourthly, the medicinal agent which seems to exert an elective therapeutical action is iodide of potassium."

Art. 151.—*Canthoplasty in Conjunctival and Corneal Affections.*

By H. Althof, M.D.

(*New York Medical Journal*, March.)

At a meeting of the Medical Society of the County of New York, Dr. Althof read a paper entitled "Clinical Notes on Diseases of Conjunctiva and Cornea." Its main object was to call attention to an important element, hitherto rather neglected, in the therapeutics of these affections,—viz., the diminishing of the pressure of the lids upon the globe. After a review of the present methods of treating the more serious forms of conjunctival disorder—granular lids, diphtheria, blennorrhœa, &c.—all of them only partially under the control of the physician, it entered more directly upon its special subject.

Thus far, three different procedures had been occasionally followed for the purpose of relieving the ball of the eye from excessive pressure—viz., incisions or excisions of chemotic conjunctiva; removal of a triangular piece of skin (down to the muscle) from the upper lid; and splitting of the outer angle. This last method undoubtedly suited best; but its good effect was very transitory, the wound healing up in too short a time (a couple of hours) to give any permanent relief. If, therefore, a way could be found to modify this remedy, so as to make its results lasting, the therapeutic means at our disposal would receive a valuable addition. This Dr. Althof thought to have found in the little operation known under the name of *canthoplasty*—the splitting of the external commissure down to the conjunctival sac, and careful uniting of the conjunctiva to the outer integument.

The results of this simple procedure had been very favourable, a large number of cases at present testifying to its efficiency. It had rapidly become popular in our great infirmaries, and was now, after five years' trial, considered by American oculists a very welcome remedy in cases which had baffled the most skilful efforts, and in diseases against which the prevailing treatment was almost powerless. Granular lids and phlyctenular conjunctivitis and keratitis furnished the great majority of cases in which canthoplasty might be employed with advantage—to cut off acute attacks, to diminish the number of relapses or prevent them altogether, and to give other remedies a better chance for effecting a perfect cure. In genuine diphtheria the doctor thought it almost indispensable; and blennorrhœa in its most acute and destructive forms lost most of its dangers.

Dr. H. D. Noyes agreed with Dr. Althof in his high estimate of the operation of canthoplasty. It had become as much a *sine quâ non* in the treatment of trachoma as had iridectomy in that of glaucoma and diseases of the iris.

The remarks upon diphtheritic conjunctivitis had especially interested him from the fact that he had, within three weeks, had in his practice four cases of the affection, one of them very severe, involving the ocular as well as the palpebral conjunctiva. Up to six months ago his experience had furnished him with but few examples of this disease. Since that time he had had perhaps a dozen; and he believed the occurrence of these cases in such close succession was coincident with an unusual prevalence of scarlet fever, and of croupous affections generally.

As to the therapeutics of conjunctival disorders, there was less need of discovering new means of treatment than of learning precision in the application of those now known; for their number was already bewildering.

Dr. Agnew's experience had confirmed his belief in the bold use of canthoplasty. He had been led to modify the operation by division of the edge of the external tarsal ligament of the upper lid only, as exposed in the wound. It was the pressure of the tarsal cartilage of the upper lid which caused the chief trouble; and the incision of skin and mucous membrane alone would not always make such pressure harmless. He felt confident that, since the introduction of iridectomy, no other addition so important as canthoplasty had been made to the resources of ophthalmic therapeutics.

Dr. Edward Curtis could testify to the value of the procedure in phlyctenular conjunctivitis, the promptness of its effect seeming at times almost magical. He related a case, attended with great photophobia, cured by its means in a couple of days.

Dr. R. H. Derby thought that the advantage of the operation lay perhaps as much in its enabling the surgeon to reach the retro-tarsal fold with his applications as in the relief from pressure it afforded. Von Graefe objected to its employment in diphtheritic conjunctivitis, from the danger that any wound in such a case might itself become the seat of diphtheritic deposit.

Dr. Althof had had only seventeen cases of diphtheritic conjunctivitis in five years, up to September last, though since then he had seen at least twenty. He would not set his own slight experience against Von Graefe's; but, although he had always found the diphtheritic deposit infiltrating the incision, as it does wounds of other parts, yet he regarded this as of slight consequence when compared with the great advantages conferred by the operation. By the time the diphtheritic trouble was cured, the wound was well healed, and no harm had come of it.

Dr. Roosa had never seen any grave consequences from the operation as performed by Dr. Althof, though he had several times seen ectropion of the lower lid follow, as a result, perhaps, of the incision having been made not horizontally outward, but obliquely downward. He had known, however, one or two instances of serious injury from the operation, where the dissection of the conjunctiva was made very thorough and carried into the orbital tissue. In one case the eye was lost. Four years ago he had had a dispensary-case of phlyctenular keratitis relieved most remarkably, in twelve hours, by the operation. He was not aware at the time that it had been previously performed for this form of disease.

Dr. Loring had been anticipated by the last speaker in most of what he was about to say. He had observed some half a dozen cases of

ectropion due to the operation; and had several times seen trouble from too free a dissection of the parts. He thought the division of the external tarsal ligament, suggested by Dr. Agnew, should be limited to those cases in which trachoma had progressed to the extent of converting the inner surface of the lid into a hard, cicatricial tissue, which, by its contraction, had warped the tarsal cartilage, increasing its natural curvature, so as to bring its sharp edge against the cornea. He had himself formerly employed the method, originally proposed by Pagenstecher, of dissecting up the conjunctiva so as to make a considerable flap, the sides of which were so stitched to the skin, near the outer extremity of the horizontal incision, as to convert this into a wound, with its long diameter vertical. But this produced much greater deformity than the method followed by Dr. Althof; and, moreover, as before remarked, the liberal incision into the orbit was by no means free from danger. He had seen two instances of severe inflammation from it, one of them being that referred to by Dr. Roosa, in which the eye was destroyed. He had, therefore, abandoned the plan in favour of the simple operation recommended in the paper. In this, as there stated, the stitch at the angle was the main point upon which success would depend.

Dr. Agnew did not mean to say that he would cut the tarsal ligament in every case, or that he would ever cut it in the lower lid. But he would incise it oftener than recommended by Dr. Loring, on account of the danger of relapse when this was omitted. Indeed, he had more than once been obliged to divide the ligament by a secondary operation, where the ordinary horizontal incision, previously made by another surgeon, had proved insufficient. There was no difficult dissection required, and no danger of orbital cellulitis. It usually sufficed to make the incision through the edge of the ligament, near its insertion into the periosteum of the orbital rim. It need not be cut in such simple cases as those of phlyctenular ophthalmia with photophobia.

Art. 152.—*On the Treatment of Ophthalmia Pustularis.*

By Dr. J. Hock, of Vienna.

(*Oesterreichische Jahrbüch für Pädiatrik*, 1871, p. 41; *Schmidt's Jahrbücher*, No. 11, 1871.)

The author lays down the following indications for the treatment of the inflammatory forms known as scrofulous ophthalmia:—

If the eye be merely reddened, and vesicular eruption be present, the case is one presenting chiefly catarrhal phenomena, and may be treated with a weak solution of corrosive sublimate as a collyrium, with the addition of two or three drops of laudanum.

If papules or small blebs be present on the cornea, and there be photophobia, powdered calomel should be applied locally. If, however, the cornea be marked by punctated opacity, and the photophobia be intense, the use of calomel should be deferred for some days, and only a lotion of corrosive sublimate be used.

If papules be present on the cornea, the local application of calomel is useful only when the pupil is dilated. If the pupil be contracted,

atropine drops should be used to overcome the mydriasis, and their use be continued until the ciliary irritation has ceased.

On the formation of the so-called scrofulous vascular lines, the use of belladonna salve, in addition to that of mydriatics, is often necessary. The eye also must be kept from the light, and covered by folds of lint.

When the irritative phenomena are very intense, and palpebral spasm and lachrymation are well marked, vascular keratitis is then usually present, and then the best treatment consists in the dropping in of a *tepid* solution of atropine. If there be no eczema, use may be made of a salve of opium and belladonna. The mydriasis must be persistent before the surgeon can have recourse to the local use of calomel.

In pannous conditions, dropping in tincture of opium, or pencilling the lids with a salve of yellow precipitate, may sometimes be beneficial.

In ulceration of the cornea, an instillation of atropine frequently repeated daily is indispensable. If the ulcer has involved the deep layers of the cornea, so as to threaten perforation, a pressure-bandage should be applied.

Art. 153.—*On a New Proceeding for the Destruction of the Capsule of the Lens in the Operation for Cataract.**

By M. Perrin.

(*Gazette Hebdomadaire*, No. 43, 1871.)

"The generalization of the linear method has rendered very rare the immediate dangers of extraction—such as iritis, herniæ, inflammation of the globe, &c.; but it is not so with regard to secondary cataracts. These, indeed, are more frequently inevitable. Opacities occur after the most successful extraction of cataract. With lateral illumination, one may almost always make out that the pupil is encumbered by a delicate grey network, in which can often be observed a very small orifice, corresponding to the breach made by the cystotome at the time of the operation. The pupillar opacities are often so slight that they do not much disturb the vision, the patient being able to read and write. In other instances, although the immediate results of the operation may have been free from complications, the opacities represent a veil sufficiently thick to call for a consecutive discission. Finally, the opacity is often so great as to constitute a failure of the operation.

"These opacities have in most instances their starting point in the retention within the eye of some of the cortical layers of the lens. This retention is due to the very nature of the cataract, and it is on this account that the retrogressive soft cataract, the zonular cataract, &c., inspire less security than other forms; but it seems to me to be very much favoured by the mode in which the capsular sac has been opened. A linear or crucial incision does not allow the lens to escape readily; it presses against the lips of the capsular wound, tears them laterally, and so tends to leave behind its most viscid parts. When the evolution of the lens has been accomplished, the flaps of the capsule, fixed at their periphery, but moveable in the papillary field, remain in place. The in-

* Communicated to the Société de Chirurgie.

ward rolling which a healthy and isolated capsule undergoes has very little effect upon the patient, by reason, without doubt, of the presence of viscid débris which covers the external surfaces of the flaps; and this is proved by the fact that the flaps are often joined together by a newly-formed vitreous material, which leaves in the capsule a much smaller orifice than that produced by the original breach. It results from this that the elements of the lens left within the eye, and represented either by the subcapsular epithelial layer or by the crystalline fibres, affected or not with cataractous degeneration, are bathed for too short a period by the aqueous humour, which element is indispensable to their absorption. They rest covered by the débris of the capsule, and are isolated by about the eighth day, when the union of the flaps is completed; the breach is then closed; the débris may be transformed, but it cannot disappear.

"In other cases secondary cataract is the result of proliferation of the subcapsular cells. This hypergenesis may be sufficiently active to give to the internal face of the capsule the appearance of a surface roughened by papillæ. Finally, secondary cataract may also be the consequence of deposits upon the lens anterior to the operation—deposits of coagulable lymph or fibrine, of calcareous salts, of urea, fat, &c. The retention of these various elements within the eye is a permanent cause of irritation which often bears its fruits. At a given moment, towards the sixth, eighth, or twelfth day, the iris resists the action of atropine, and a layer of exudation is formed which adds to the opacity. The pupil is contracted, and represented for several weeks by a small surface occupied by a white resistant false membrane. The anterior part of the capsule is the almost exclusive seat of these false membranes.

"The capsule is the great cause of embarrassment during the operation, and of danger afterwards. If one could do away with this, it would be an advantageous step. In 1773 Heister recommended the extraction of the capsule with the lens; Beer, and quite recently Pagenstecher and Wechler, have done the same. Notwithstanding the success which has attended these bold attempts, I hold that the proceedings recommended or employed for extracting the lens and its capsule are dangerous. But although they represent a bad general method, they may be required to render service in certain cases. If one could extract the anterior layer of the capsule, the source of danger would be removed. I think that I have found a means of attaining this. My proceeding differs from others in the mode by which the capsule is attacked. The various cystitomes make a button-hole wound, and in the favourable cases a small triangular flap. I hope to have discovered the means of removing this layer, if not in its totality at least its most injurious part, in a new instrument to which I have given the name of capsular claw—*griffe capsulaire.*

"The capsular claw is composed of a small oval steel disc, resembling very much in form and dimensions those of Graefe's traction hook; its terminal border is armed with small teeth inserted at about 45 degrees and with the form of flattened pyramids. These teeth juxtaposed at their bases are well tempered and furnished with cutting edges. The small disc is supported by a stalk fitted to a handle of the ordinary

model for oculistic instruments. The arrangement of the teeth is such that their simultaneous penetration through a tense membrane produces a clean cut, the extent of which is equal to the width of the instrument. If at this moment one makes slight traction at right angles to the direction of the incision, this is elongated by lateral lacerations which are prolonged more or less obliquely, as far as the fixed points of the membrane, and serve to detach a greater part of it. The application of this instrument on the cadaver and on animals has constantly succeeded in detaching very extensively the capsule of the lens.

"The employment of this instrument exposes the patient to no danger. The linear section of the cornea and the excision of the iris being terminated, the claw is introduced between the lips of the wound, care being taken to apply the back of the instrument against the anterior lip in order to avoid any contusion; it is then conducted to the extreme part of the pupil. The instrument is then applied to the capsule; this having been divided at the desired points, the instrument is withdrawn in slightly lowering the handle in such a manner as to follow very closely the curve represented by the convexity of the lens. When the claw has been brought back to the level of the wound it is necessary, in order to disengage the teeth and to prevent them from being caught in the posterior flap, to return it for a short distance, and then to support it against the corneal flap as at the time of operation.

"In eight patients operated upon with this claw, I was able to assure myself that the lens had been reclined by the degree of clearness and the purity of the pupil. In those cataracts which may be called malignant, the use of the claw would be attended with but very slight advantages: the teeth would divide the capsule into small fibrillæ which, notwithstanding all efforts, would remain in the pupillar field. To resume: this new operative proceeding seems to me to offer the following advantages which longer experience will serve either to confirm or to weaken:—

"1. Without complicating the operation for extraction, it permits the surgeon to recline the injurious part of anterior layer of the capsule, and in this manner to destroy the capsular sac.

"2. It serves to dispose of the almost unique cause of secondary cataracts.

"3. It facilitates the escape of the cataract, expulsion of the cortical masses, and absorption of the débris left in the eye.

"4. The capsular claw may be substituted with advantage for the capsular forceps in cases where it is proposed to attempt extraction of the pupillar opacities."

Art. 154.—*Anæsthesia of the Retina produced by an Overdose of Quinine.*

By J. Vose Solomon, F.R.C.S., Professor of Ophthalmology in Queen's College, and Surgeon to the Birmingham and Midland Eye Hospital.

(*Birmingham Medical Review.*)

The records of cases in which a large dose of quinine has produced serious disorder of the visual sense are sufficiently few in number and

meagre in detail to warrant the publication of the following instance.

"On the 12th of March, 1869, Mr. M., a seafaring man, of education, and in easy circumstances, aged thirty, who had been in India, China, and the South Sea Islands, consulted me for a failure of vision, of which he gave the following history :—'Nine days since, March 3rd, I took at seven in the evening a teaspoonful of Howard's sulphate of quinine for the relief of severe tic in my left temple. The medicine soon produced slight vertigo, chilliness, a sense of sickness, and failure of sight. On the next morning I took an emetic, in the hope that it would alleviate the sickness.' The patient, who is naturally an excitable man, was more so than usual, and apprehensive of blindness falling upon him.

"*State of Vision.**—I found he could read brilliant type (Jaeger's No 1), a single letter only at a time (syllabically), so contracted was his field of vision, or, in other words, so complete was the anæsthesia of the whole retina except the point occupied by the yellow spot. His sight, he stated, had been on some days worse than it was upon his visit to me. The power of adjustment was unimpaired, and there was an absence of strabismus.

"*Field of Vision.*—On testing the visual field of the right eye with my fingers, I discovered that to even so gross a test there was abolition of all the fields, except at a point opposite the yellow spot. In the left eye the temporal field was good, the nasal reduced to two inches; the patient's nose was small, and hence had no influence in the contraction of the latter.

"*Appearance of the Eyes.*—The pupils were of normal diameters, and moved sluggishly; there was no external congestion.

"*The Tension* of the globes was normal, the right being perhaps, a little firmer of the two. An *ophthalmoscopic* examination revealed a normal state of the optic nerves and retina. The choroids were of a bright red colour, which may have been due in some measure to exposure to the heat and glare of the hot climates the patient had visited.

"*Treatment.*—I prescribed a bromide of potash mixture, with a view to the allayment of the mental excitement, and a small blister to the nape of the neck.

"The ophthalmic symptoms gradually subsided, but his brain continued to evince signs of irritation, and in 1870, the patient suffered from several epileptic seizures; nevertheless he again went to sea, and in December, 1871, when last seen by me, declared himself to be in perfect health—a statement which his general appearance seemed to justify. In consequence of the patient having limited his consultations with me to two occasions, I have been able to give no more than a very general sketch of his progress after our first interview.

"*Remarks.*—The great rarity of instances of retinal disturbance from an overdose of quinine may be judged by the fact that no case is recorded in any one of our ophthalmic treatises, and with a single exception the subject is not even referred to, and in that exceptional instance is dismissed in some half dozen lines. In a case related by

* Of each eye.

Trousseau and Pidoux, forty-eight grains of quinine, taken for the relief of asthma, marked by periodicity, produced in seven hours *blindness*, deafness, delirium, vertigo, and vomiting—symptoms which subsided in the course of the following night."*

Art. 155.—*Cases of Injury to the Eye.*

By George C. Harlan, M.D., Surgeon to Wills Ophthalmic Hospital.

(*American Journal of the Medical Sciences*, January.)

"As the following cases, occurring recently in the practice of the hospital, present some points not frequently met with, they seem of sufficient interest to record.

Case 1.—L. W., æt. about fifteen, seven months before application at the hospital dispensary, was struck on the closed upper lid of the right eye with a tin horn thrown by a playmate. There was a slight cicatrix on the lid just above its ciliary margin, and an indistinct scar exactly at the corneo-sclerotic junction, occupying its lower and inner third. Not a vestige of the iris remained, the fundus giving a bright red reflex even with diffused daylight.

Ophthalmoscopic examination by the erect image showed the fundus normal, except a slight separation of the retina at the ora serrata at a point corresponding to the cicatrix in the ball; it also showed a high degree of hypermetropia, which, when properly tested, was found to equal 1–3·5. The catoptric test revealed absence of the lens.

The eye unaided had scarcely more than quantitative vision, but with a stenopaic hole and a + 1–3·5 glass, No. XXX. of Snellen's types could be read at twenty feet, and some of the letters of No. XX. could be made out.

Adding + $\frac{1}{12}$ for accommodation, gave + $2\frac{3}{4}$, with which the smallest type of the text-book could be freely read at one foot.

When a point of light was thrown upon the fundus by means of a convex lens, the retinal vessels and the optic disk could be distinctly seen by the unaided eye, placed as nearly as possible in the line of the emergent rays. This was confirmed by Drs. Hunt, Thompson, and Norris, who examined the case.

The wound of the ball through which the lens and iris were forced out was, of course, not a direct injury, but a rupture by contre-coup. The cicatrix was so indistinct that it escaped notice until the discovery by the ophthalmoscope of the lesion at the ora serrata directed especial attention to the part.

"It is certainly remarkable that so inexperienced an operator as a rough school-boy, with so crude an instrument as a tin-horn, could have extracted the lens with a result more perfect than is often attained by the most accomplished operators with the most delicate of instruments.

Case 2.—The day before the appearance of the above case, a man presented himself who had lost the whole of his iris, through a wound of the

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* *Vide* Pereira, vol. ii. part ii. ed. 3.

cornea, except a small triangular piece, with its base at the attached circumference and its apex adherent to the cornea, which had been held by an anterior synechia. The lens was undisturbed.

"As the man disappeared before the examination was completed, the case is of little interest except as an illustration of the strange coincidence of unusual cases, which seems almost a law.

CASE 3.—I recall from memory a case in which the lens had been dislocated by a blow, in a very myopic patient, with an extensive posterior staphyloma. When the lens, which was dancing about in the vitreous, was thrown out of the line of vision by the position of the head, vision was greatly improved by its absence. He was quite proud, for instance, of being able to see, with great distinctness, a fly upon the ceiling, which he had never done in his life before.

CASE 4.—A boy, twelve years of age, employed in a type-foundry, was brought to the hospital about two weeks ago, just after some of the molten metal had been splashed into his eye.

The lids were partially open, showing plainly the nature of the injury. A little process of the metal projected through the commissure, and some of the lashes of the upper lid had become involved in it as it hardened. These were cut, and with a strabismus-hook placed under the lower edge of the mass, it was tilted out in the same manner as an artificial eye, and with as much ease. As it was moulded between the ball and the lids, its resemblance in form to an artificial eye was very striking. It measured about six-eighths of an inch in each direction, and weighed seventy-three grains.

Vision was of course destroyed, but the ball did not suppurate or the cornea slough. There is now complete symblepharon of both lids, but no indication, as yet, of sympathetic trouble in the other eye.

CASE 5.—A few days afterwards a plumber was engaged in putting up a hitching-post in the street, when some of his melted solder was blown into his eye. He came at once to the hospital, with his eye closed and sealed, the lashes being tightly soldered together. When the lashes were cut, the metal dropped off, and the eye was found to be uninjured.

CASE 6.—A boy, nineteen years of age, was admitted to the hospital a few weeks ago to be treated for pain in a blind and shrunken bulb, and sympathetic irritation of the other eye.

Four years before, he had been struck in the eye by a piece of cold steel from a nut-punch. He stated that he had never been quite free from pain since, but that the symptoms of weakness and irritability of the other eye had only commenced a month before. There was a deep cicatrix, a kind of notch, at the upper and inner part of the ball, extending through the ciliary region, which was excessively sensitive, the patient starting, as if from an electric shock, when it was touched. When the injured eye was extirpated, a piece of iron was found embedded in the orbital tissue. It was an eighth of an inch wide and more than an inch long, and must have passed through the eye to reach its position behind it and at the inner side of the internal rectus muscle. Its surface was rough, and it was held so closely by the surrounding tissue that it was found impossible to remove it until it was dissected out, almost like a piece of bone, from its periosteum. The operation was followed by complete relief.

"It is worthy of remark, though not a very unusual circumstance, that the symptoms of sympathetic ophthalmia did not supervene until nearly four years after the injury."

Art. 156.—*Peculiar Treatment of Syphilitic Iritis.*

By Dr. De Magri.

(*Giornale delle Mal-Veneree*, February; and *The Lancet*, March 23.)

Dr. De Magri, of Milan, has treated a series of cases of this kind by injecting calomel into the left arm. He usually injects six grains of calomel suspended in glycerine; an abscess, mostly connected with sloughing, forms, and the eye instantly improves. Atropine is, however, freely instilled into the latter, and the improvement is attributed to the powerful counter-irritation exerted in the arm. Even cases of pannus and scrofulous keratitis are thus treated, and with equal success.

Now when it is recollected that it is maintained by some men of experience that atropine alone is sufficient in such cases, the faith in the revulsive action is a little shaken. Then it may be asked whether an abscess excited by other substances than calomel would not be as efficacious; or whether the author supposes that this salt acts on the whole organism. That calomel does good in iritis, whether syphilitic or not, is still believed by those who do not ignore the experience of the past. How much simpler then to give this mercurial chloride by the mouth, and have recourse to simple counter-irritation on the temple, not neglecting atropine. Hypodermic injections are the fashion of the day; they are useful, but they should not, without good reason, take the place of other methods of treatment. So with chloral, which is now tried for almost everything; we have, for example, Dr. Accetella,* who dresses sores, both primary and tertiary, with a concentrated solution of the hydrate. Some benefit was obtained, but it always remains to be seen whether other and older applications would not have done as well or better.

Art. 157.—*The Uses of Atropia.*

By Ernest Hart, late Ophthalmic and Aural Surgeon to St. Mary's Hospital.

(*British Medical Journal*, April 27.)

Mr. Hart does not think that he shall be using an exaggerated form of expression, or going beyond the strict and well-balanced weight of words which is necessary to give due force to the fact to be conveyed, if he says that we could, in the treatment of ophthalmic disease, better afford at this day, so far as our knowledge of disease and means of mastering it extend, to dispense with all other drugs, lotions, and applications put together, than with this one *topical* medicament. Let us consider what atropine does for the inflamed eye. It allays local sensitiveness, and removes local spasm; it gives to the eye and to its internal muscular apparatus—iris and ciliary muscle—physiological rest, the greatest of all curative means. Nor does it do this only, but, in dilating the pupillary

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* *L'Independente*, No. 2, 1872.

aperture, it drives far from us the bugbear which long haunted the ophthalmic surgeon, and which still pursues those who are not sedulously active in the use of atropia—closure of the contracted pupil by an adherent plug of lymph, and gluing of the uveal surface of the iris to the lens. It would rob the consulting surgeon of a great many profitable but trying operations, if the atropine eye-drops were ready in every surgery, not only on all emergencies, but for the exigencies of daily practice. It is as safe a rule in ophthalmic practice to use an atropine drop when in doubt, as in whist to play a trump. Mr. Hart can hardly think of more than one absolute contra-indication, and that is the existing oval dilatation of the iris in glaucoma. There are, of course, also mechanical contra-indications, as in peripheral wounds of the cornea with hernia of the iris, where to dilate the iris is to increase the peripheral protrusion; but even here, the moment the corneal gap is healed, atropia becomes of the first necessity. But in all cases of iritis, in contusions and injuries of the eye, in corneitis, purulent ophthalmia, scrofulous ophthalmia, and deep-seated mixed inflammations of the eye, the local instillation of a solution of atropia is the most precious of therapeutic means. The most useful strength is, Mr. Hart thinks, expressed in the formula: Neutral sulphate of atropia, two grains; glycerine, five drops; distilled water, an ounce. The frequency of the use of the drop must vary with the facility and rapidity with which it acts. Where the iris has become much inflamed before the local treatment is adopted, it is sometimes very indocile, slow to respond, and hard to dilate. Then the measure of frequency must be the amount of resistance, and perseverance must be the rule of treatment. In the treatment of keratitis and minor cases of deeper inflammations, one application a day, or at most two, will suffice; and presently, once in two or three days. It will be enough then to keep the pupil dilated, and the ciliary apparatus at rest and free from tormenting spasm. The present result of the most careful observation of the origin and cause of ophthalmic disease, pursued with the advantages of the improved methods of optical diagnosis now at our command, is to simplify our treatment, and to ostracize a majority of superfluous agents of medication. With a little cotton-wool, alum, and glycerine, hot and cold water and atropine, and a pocket case of instruments, we can treat with a previously unattainable success nearly the whole range of ophthalmic diseases. Mr. Hart will not undertake to say that mercury is useless in the treatment of some forms of (syphilitic) iritis; but he affirms that he has repeatedly seen iritis occur and run a very severe course in patients previously and at the time already under the influence of mercury; and that, in a long series of cases which he treated by atropia and careful dieting only, and without mercury, during five years at St. Mary's Hospital, the results were so excellent that he could not affirm that they would have been improved by the most guarded and judicious use of mercury.

It is possible, though not easy, to abuse atropine. It must not be used in glaucoma or in peripheral wounds of the cornea. A case or two of troublesome constitutional symptoms, through absorption of the excess by the lachrymal mucous membrane, have been recorded. This is never likely to occur with ordinary care, and Mr. Hart has never seen it occur; but it may be well to bear in mind in treating infants. The most con-

venient and unfailing application may be made by the use of the atropized gelatine discs which the author introduced a few years since; and which are now largely used in this country and abroad. They are always ready, do not spoil by time, and are clean and precisely dosed; each disc containing as much as a drop of the solution mentioned.

Art. 158.—*Albuminuric Retinitis.*

By H. R. Swanzy, M.B., L.R.C.S.I., Ophthalmic Surgeon to the Adelaide Hospital, Dublin, and Surgeon to the National Eye and Ear Infirmary; late Assistant to the late Professor von Graefe, Berlin.

(*Medical Press and Circular.*)

Mr. Swanzy, speaking of this affection, says:—"Every one who has busied himself specially with diseases of the eye must have had frequent occasion to diagnosticate Bright's disease by the ophthalmoscopic appearances, while, as yet, there were no other prominent symptoms." The disturbance of the function of the eye being the first thing which would lead the patient to seek medical advice, he thinks the physician who takes the trouble to learn the use of this instrument will be abundantly paid, during his first five years' practice, in his ability to use it as a means of diagnosis in this affection alone. He says that "as a general rule, in those cases where the eye gives the first indication of the presence of Bright's disease, the progress of the latter is from that time very rapid. From three to six or eight weeks is commonly long enough to bring the case to a fatal termination, and it is rare for these patients to live for three or four months after the sight has become affected."

Art. 159.—*Amblyopia from White Atrophy of Optic Nerve greatly benefited by the Continuous Galvanic Current.*

By Donald Fraser, M.D.

(*Glasgow Medical Journal,* February.)

An extremely interesting case of this is recorded by Dr. Donald Fraser, of Paisley. The subject of it was a weaver, æt. fifty-nine; had always been a healthy man, and temperate; for the last ten years has smoked two and a half ounces of tobacco per week. At the age of forty-four he began to use spectacles for presbyopia. For the last nine years of his work as a weaver he taxed his eyes severely at pattern-weaving, working most of the day, during the greater part of the year, in gas-light. For the last five years his sight had been gradually failing. It was not, however, until the beginning of last year that he began to be

alarmed at the rapid increase of this failure. He now became dyspeptic, low spirited, and weak; all this due, he considered, to the depressing effects of some family troubles. At this time, during the day, a mist came before his eyes, which passed away at twilight, so that by gaslight he could read, for a few minutes at a time, the largest type of the newspapers with No. 6 convex glasses. About nine months ago even this became impossible. When he consulted Dr. Fraser, September 8, 1871, "he complained of a mist being constantly before his eyes, so that he was unable to recognise his most intimate friends above a yard off. I found that he could read slowly, and with effort, No. 20 of Snellen's test types at four inches from his eyes with the right eye, at eight inches with the left, and at six inches with both. On examination with the ophthalmoscope, the outer two-thirds of the optic disk in both eyes was found to be pearly white in tint and glistening, and the inner third hyperæmic, the retinal veins were enlarged and tortuous, and the arteries diminished in number and calibre. Alongside some of the vessels were to be seen the white lines said to be characteristic of *neuritis descendens*. There was here then a markedly atrophic condition of the optic nerve, most probably primary; there being no certain evidence either by the ophthalmoscope, or otherwise, of intra-ocular causes sufficient to produce such atrophy. I dismissed the idea of the disease being due to tobacco poisoning, although, in some respects, the condition of the disk seemed closely allied to what is usually described as due to excess in smoking. At the same time there was not, and never had been, any symptom of cerebral affection. Still I have been strongly impressed with the idea that this was a case of primary degeneration of the optic nerve, a degeneration which may find illustration in cases of so-called tobacco amaurosis. Dr. Fraser advised the patient to consult Dr. Thomas Reid, of Glasgow, who confirmed the diagnosis, and recommended the use of bichloride of mercury in combination with iodide of potassium, which treatment was commenced on the 10th of September, and continued for a month. During this time the patient was a good deal at the coast, and came back to town much improved in general health. His sight, however, was scarcely, if at all, improved; although he could read No. 20 at $7\frac{1}{2}$ inches. At this visit I passed a current from six cells of a Stöhrer's battery through the temples for about twenty seconds. On testing his sight immediately afterwards, I found that he could read No. 20 at $9\frac{1}{2}$ inches; an improvement of two inches within a period of as many minutes. I advised him, however, to go on with the bichloride mixture for another week or so. I saw him again on the 8th October, when I found, as I expected, his temporary gain had left him, he being only able to see No. 20 at $7\frac{1}{2}$ inches as before. I may here mention that in reading, my patient always sought to make the best of his case, so that the limit of clear definition would be more correctly stated at an inch less than the above figure. I again tested him with the current, the result being an improvement of three inches. Two days afterwards he could read at $8\frac{1}{2}$ inches. I again applied the current, and immediately afterwards he read at 10 inches. Feeling satisfied now that the galvanic treatment would yield good results, I asked him to cease taking the mixture, and to call upon me every morning at 10 A.M. In order to insure accuracy in the results, I kept him to the same hour, position as to

light, &c. The days at this season, and at the above hour, were usually dark and foggy; conditions, by the way, in which he could see best. On clear, sunny days, he described the mist as being particularly thick and dark before his eyes. About a week after I began the galvanic treatment he improved in this respect, being able to see best on a clear day.

"I continued the galvanization daily for a month, then every second day, sometimes every third day, and again every day as I thought fit. I sought to avoid the dangers of over-stimulation by the weakness of the current—six cells—and the shortness of the application, which never exceeded thirty seconds. I applied the electrodes at first to the temples, and to the long axis of the head, at each break of the current producing the flash indicative of retinal irritation. Latterly, I applied one to the forehead, the other to the tongue, with alternations. Occasionally, and experimentally, I applied a current from eight cells to the cervical sympathetic—the results, however, never seemed so good as by the other methods.

"The treatment was continued for three months, during which time his progress was a matter of daily observation. At the end of that period he could read No. 5½ Snellen with as much ease as at the beginning he could read No. 20. The improvement in his health and spirits due to this progressive recovery of sight has been very marked." Dr. F. has tabulated the results, and it is shown that every day there was a distinct improvement of one inch in his ability to read the test types, and this improvement was confirmed by ophthalmoscopic examination. "On the 19th November, 1871," says Dr. F., "I fancied, on examining the fundus, that the condition of the disk was, if anything, slightly improved. On the 11th January, 1872, I made a very careful examination, and was satisfied that while the atrophic condition of the disk was still very marked, there was an improvement. This was particularly so in the case of the retinal circulation, the arteries being distinctly larger in calibre, while the veins were smaller and much less tortuous. As it was an important point that there should be no doubt as to this improvement, I again asked my patient to see Dr. Reid, who substantially agreed with me.

"The question now is, how far this improvement will go. I do not expect that much more can be effected in the case, although I mean to continue the treatment twice a week or so for some time to come. A more important question is, how far will the results be permanent? My impression is, that with care on the part of the patient his present condition may be maintained for a considerable length of time, if not permanently.

"But whether this be so or not, it is evident from the opthalmoscopic examinations, that we have not simply stimulated the patient's retina, but that we have distinctly improved its circulation, as well as the nutrition of the optic nerve, and that this has been done in a disease in which ordinary medical treatment is practically useless."

Art. 160.—*Melanotic Tumour of the Eye; Excision of the Globe and Application of the Chloride-of-Zinc Paste to the Tissues within the Orbit; Recovery.*

Under the care of Mr. George Lawson, at the Royal London Ophthalmic Hospital, Moorfields.

(*The Lancet*, May 11.)

The chief interest in this case is the method which Mr. Lawson adopted in applying the chloride-of-zinc paste to the tissues within the orbit after the eye had been removed. His object was to avoid the destruction of the eyelids, a result which generally follows the free application of this caustic to the parts within the orbit. In this he was successful; the chloride of zinc destroyed effectually the contents of the orbit, which came away in large sloughs, but both the eyelids remained intact. The following are the notes of the case:—

J. B., aged fifty, a tall, healthy-looking man, with no family history of cancer. About four years ago he discovered that the sight of the right eye on the temporal side was lost, and this failure of sight increased until in about six weeks he was quite blind. He then suffered from a severe attack of inflammation of the affected eye, for which he was sent to his county hospital. Under treatment all inflammation ceased, and the eye regained its external normal appearance; but the sight was lost, and with that eye he has continued blind. From that time the eye remained quiet until the present attack, which began eight weeks before he was admitted into the hospital. The eye then became exceedingly painful, the cornea ulcerated, and a vascular growth protruded, from which he had repeated attacks of hæmorrhage which obliged him to seek medical assistance. On April 9th he was admitted into the Ophthalmic Hospital.

On admission, the globe was larger than the other eye, and evidently distended by a growth within it. There were dark bluish-coloured bulgings in the ciliary region on the upper and inner side of the eye. The greater part of the cornea was occupied by a vascular warty-looking growth, from which for the last fortnight there had been frequent hæmorrhages, requiring the man to seek assistance from a surgeon in the neighbourhood, who each time succeeded in arresting the bleeding by the use of strong astringent applications.

Mr. Lawson excised the globe, the interior of which was occupied by a melanotic tumour, which had forced its way through the cornea. A pad of lint was applied over the orbit, and allowed to remain for about half an hour, until all the hæmorrhage had become completely arrested. The bandage was then removed, and a speculum having been introduced between the lids, the mouth of the bag of conjunctiva from which the eye had been enucleated was carefully held open with two pairs of forceps whilst Mr. Lawson passed into it the chloride-of-zinc paste, spread on two pieces of lint. The conjunctival edges were now drawn together, and the remaining cavity of the orbit firmly filled up with a number of pieces of dried sponge, over which the lids were closed, and

then a compress and bandage applied. A subcutaneous injection of morphia was given in order to avoid the pain which the chloride of zinc often occasions. On the following morning the lids were swollen, but there was no evidence of the chloride of zinc having reached them.

The patient progressed favourably; large sloughs came away from the orbit, but both the upper and lower eyelids entirely escaped the action of the caustic, and the man left the hospital on April 23rd.

Art. 161.—*On Extraction of Cataract by a Peripheral Section of the Iris without injuring the Pupil.*

By Charles Bell Taylor, M.D., F.R.C.S.E., Surgeon to the Nottingham and Midland Eye Infirmary.

(*The Lancet*, November 4.)

Dr. Taylor suggests a modification of the ordinary method of extraction, which essentially consists in removing a portion of the periphery of the iris instead of its whole breadth. He observes that prolapse of the iris has always been the bugbear of extraction wherever iridectomy has not formed a part of that operation; and yet the extreme beauty and superexcellence of the results, when no accident has occurred and when all has gone well, after one of the old flap operations, is such that we constantly find ophthalmic surgeons abandoning the modern methods to revert to the old and necessarily much more dangerous flap extraction. Dr. Taylor lays before the profession the steps of the process, which are briefly as follows:—

As a rule he administers a mild aperient the day before the operation, and extracts the following morning before breakfast. Chloroform is much more pleasantly given under these circumstances. The risk of vomiting is to a great extent obviated, and that of all other accidents dependent upon anæsthesia diminished.

The instruments he employs are a pair of sharp forceps that pierce the sclerotic; a very light speculum (a modification of Von Graefe's); and two knives, a line in width, and bent at an angle similar to the ordinary iridectomy knife—one with a sharp point, the other with a blunt or bulbous extremity.

Having separated the lids with the speculum, he turns the eye gently downwards with a pair of ordinary forceps in the operator's right hand, and when in a favourable position, it is fixed by the sharp forceps at about the junction of the upper with the middle third of the cornea; the pointed knife is then entered in the corneo-sclerotic junction one or two lines from the forceps at the summit of the cornea, pushed well into the anterior chamber, and then, with a gentle sawing motion, carried along the summit until about one-third of the cornea has been incised. The capsule is then carefully divided with V. Graefe's cystitome, having been previously rendered tense, and the eye-ball fixed with a pair of ordinary forceps. It is better, he thinks, to open the capsule at this stage, because bleeding from the wounded iris—and conjunctiva also—

at a later period is apt to fill the chamber and render this part of the operation obscure and difficult. The upper segment of the iris is then seized, and a small piece of the periphery only excised, the pupillary margin and portion of iris attached to it being left untouched and free in the anterior chamber; the lens is then extruded through the gap in the ordinary way, gliding behind the pupil so that there is no stretching of the sphincter. In this way Dr. Taylor believes he has secured all the advantages in the way of safety and certainty of an associated iridectomy, and at the same time attained the grand desideratum, a central and moveable pupil.

Art. 162.—*On Tenotomy in Myopia.*

By R. H. Derby, M.D.

(*The Medical Record*, March 15.)

At a meeting of the Medical Library and Journal Association of New York, on February 9, Dr. R. H. Derby read a paper on "Progressive Myopia and its Operative Cure," advocating the doctrine that the large majority of cases of progressive near-sightedness are attended by, and to a great extent dependent upon, insufficiency of the internal recti, and hence to be relieved by division of one or both of the externi. The rules, so carefully elaborated by Von Graefe, both for determining the propriety of this operation, and for securing by it exactly the degree of effect intended, were given in detail. Several cases were cited from the practice of Von Graefe and others, where the myopia had not only been arrested in its progress by the operation, but had even considerably diminished after it; and the paper concluded with reports of selected cases from the writer's own records.

Dr. Knapp, while fully endorsing the rules laid down, as having rescued the operation from the domain of empiricism to that of strictly scientific surgery, was yet inclined to think the range of its applicability more limited than Von Graefe and his adherents contended. In his own experience the cases of myopia attended by a degree of insufficiency of the internal recti, sufficient to warrant the operation, were comparatively rare. Indeed, while admitting that insufficiency of these muscles was more frequent in myopic than in emmetropic and hyperopic persons, he must yet state, in opposition to Dr. Derby's assertion, that only a small percentage of the cases of near-sightedness was complicated with such insufficiency. Few cases of myopia were progressive after the age of twenty-four, or thereabouts; and in these severe ones tenotomy was apt to fail of the desired effect. This, he thought, was due to the ætiology of the affection. Pressure of the recti upon the globe had probably less to do with its causation than persistent strain of the accommodation; the steady contraction of the ciliary muscle interfering with the venous outflow at the anterior part of the eye (through the canal of Schlemm), and hence producing passive hyperæmia of the choroid with transudation, and softening in the coats of the posterior

part of the globe, which then yield more readily to the intraocular pressure and become extended.

Dr. Pooley agreed with Dr. Knapp, and would cut the external recti only in cases accompanied by evident muscular asthenopia.

Dr. Derby insisted upon the insufficiency of the interni only in cases of *progressive* myopia, stating that it was found in nine-tenths of these cases. It produced its effects, doubtless not to any great extent directly, by causing an increase of pressure upon the globe; but indirectly, by inducing that very strain of the accommodation to which Dr. Knapp had referred. This was in virtue of the intimate association between the contraction of the ciliary muscle and the effort at convergence of the optic axes. If this effort were increased by weakness of the internal recti, the muscle of accommodation must be constantly stimulated to excessive action.

Dr. Pomeroy thought the difficulty of converging the optic axes was sometimes an advantage to the myope. It would lead him, when his eyes were fatigued, to abandon the effort to fuse the two images, and use one eye only, relaxing the strain upon the accommodation, and placing the object somewhat further off.

Dr. Knapp called attention to the fact that frequently the worst cases of progressive myopia were those in which this very thing was apparent —where the patient never used but one eye for near work, and where, therefore, there could be no pressure of the recti upon the globe, or strain of accommodation from the effort at convergence. The relation between the effort to converge the axes and that to accommodate was not a fixed and necessary one—so much convergent effort necessitating so much accommodative—but was purely a matter of education.

163.—*On Ozæna.*

By Prosser James, M.D.

(*Medical Press and Circular*, December 6, 1871.)

At a meeting of the Medical Society of London, on October 20th, Dr. Prosser James read a paper on Ozæna, of which the following is an abstract:—

The author alluded to the intractability of the complaint and the almost hopelessness with which it is too often regarded by writers and practitioners, and intimated that care in diagnosis and perseverance in treatment may obtain more successful results. It should be our aim in every case to trace the origin of the ailment, and so reduce it to a mere symptom, though this is so difficult, that most authorities speak of idiopathic ozæna as a disease, and even with all the improvements as yet effected in rhinoscopy, there are undoubtedly cases in which we cannot demonstrate the actual lesion. These, however, he believed, will be gradually reduced in number. The simplest form of ozæna, is that commonly spoken of as catarrhal. It is the result of chronic coryza, in fact, it is coryza with fœtor superadded. The patient has suffered from colds for a long time. These became more and more chronic, till at last

a discharge remained altogether, and this at length became offensive. Rhinoscopy generally shows that the pituitary membrane is hypertrophied. Sometimes erosions or ulcerations are also brought into view. In protracted cases the membrane may be atrophied, and these are much more obstinate. This kind of ozæna mostly affects strumous patients, and constitutional treatment should therefore be employed in addition to local measures. With cod-liver oil and iodide of iron, there is often rapid improvement under the same applications that have previously proved inert. A similar condition to that already described is common in syphilitic disease of the nose. Indeed, ozæna so frequently occurs in syphilis, that on asking a gentleman the other day what he thought of ozæna, he replied, "It is a symptom of syphilis." This, however, is certainly too narrow a view. In syphilitic ozæna of this kind, it is probably the diseased condition of the mucous membrane that gives rise to the discharge, which is offensive from an early period. In catarrhal ozæna, perhaps the chronic coryza gives rise to the hypertrophy. At any rate the fœtor is later in making its appearance. It is much more common for syphilitic cases to give rise to ulceration, and this, in fact, has almost always commenced before the fœtor is complained of. At this stage the disease must not be neglected, for although now confined to the mucous membrane, it may even in secondary syphilis, extend deeper, and involve both the cartilages and the bones. Then the fœtor is sure to be aggravated. But it is in tertiary syphilis that the graver lesions mostly occur. In these cases the deeper tissues may be invaded before the mucous membrane. A patient may seek relief from distressing ozæna, amongst other prominent symptoms, and yet the most careful rhinoscopy may only reveal the darker, dusky colour of the mucous membrane with here and there erosions. In persons of a strumous constitution, the destruction will be much more rapid, and it is therefore desirable to prescribe for the scrofula as well as the venereal disease. When erosions or ulcerations can be brought into view by reflected light, they should be treated by its aid locally. Nitrate of silver, sulphate of copper, and other appropriate remedies, may be carefully applied to these spots. But the whole pituitary membrane should also be subjected to other agents. The ozæna that occurs in children in connexion with inherited syphilis, is often difficult to treat, and the investigation of its pathology is attended with peculiar difficulties. Clinically the chief point is to treat the inherited syphilis, and to bear in mind that the child may be also scrofulous. Rhinoscopically thickening of the membrane is most common. It has been remarked, that syphilis may attack the deeper tissues first or may extend to them. The former is more common in tertiary disease, and may begin as a gummatous periostitis, going on perhaps to caries and necrosis of the bones and cartilages, which exfoliate and give rise to great and characteristic disfigurement. The disease may continue its ravages until the unfortunate patient succumbs to intra-cranial mischief. Acute syphilitic periostitis is a very painful disease. The patient's sufferings are exacerbated by warmth. Hence the leading symptom is intense pain in the forehead and head, worse at night—*i.e.*, when warm in bed. During the exfoliation of pieces of bone, the ozæna is most offensive. Some people have attributed this exfolia-

tion to the abuse of mercury, but it may occur when we have reason to believe that drug has not been used, and it therefore seems just to speak of it as one of the manifestations of syphilis, although, no doubt, it might be aggravated by the injudicious use of the mineral. Besides, it is desirable not to forget that caries may occur from other causes than syphilis, for example, mechanical injury. Sometimes the rhinoscope reveals very little to us, and yet the ozæna is all the while dependent on diseased bone which cannot be brought within the range of vision. The prognosis therefore in persons with a syphilitic taint, should be guarded.

Among other causes of ozæna, mechanical injury, already incidentally alluded to, should be inquired about. Then the presence of foreign bodies is far more common than is generally supposed, especially in children. Sometimes beads, bits of pencil, and other bodies are put up the nostrils by children, and remain for weeks, or months, in a few cases for years. They are quite forgotten, and the ozæna persists until they are discovered by the rhinoscope and extracted. Those singular formations, nasal calculi, may also be mentioned. Again, ozæna may be named as one of the sequelæ of the exanthemata. Abscess may occur in these diseases, and the septum may be destroyed. In strumous children, the bones or cartilages may suffer after these diseases. There are some other causes of which time prevented the consideration, but the author could not lose the opportunity of mentioning the naso-palatine glandular disease described by his friend and colleague the President of the Society, in the first volume of the *London Hospital Reports*. *Treatment :* Some points in treatment have already been incidentally mentioned. In every case local measures should be resorted to, and in the great majority constitutional remedies are indispensable. The first point is to clear away the discharges. Until this is accomplished, the diagnosis itself cannot be properly made. What can the most skilful use of the rhinoscope show on a surface covered with discharge or crusts? The use of the nasal douche and the syringe is then the first measure. This will probably have to be continued assiduously. At first common salt, chlorate of potash, carbonate of soda, or other saline, should be used in the proportion of a teaspoonful to a pint or a quart of tepid water. Other substances had also been used by the author, and among them chloride of aluminum. This gave fair results, but the best remedy was a permanganate. The comfort this gives to patients is remarkable, and under its persistent use, the membrane assumes a healthy appearance. It at once removes the fœtor in many cases, and this is all in all to the patient. A weak solution may be employed at first, gradually increasing it until it produces a little smarting, for it should not be forgotten that this substance is a powerful caustic, one of the best and safest we can employ. Ulcerations and erosions may be touched with a strong solution or with a paste, and the whole membrane thoroughly and frequently washed with a weaker solution by means of the nasal douche, the atomizer, and camel-hair brushes. Mercurial lotions are used by some, but are not so effectual as permanganates, and the risk of absorption, after the recent case of a far more justifiable resort to the mineral, cannot be overlooked. Various powders by insufflation are sometimes effectual, though this mode of medication has serious drawbacks. Inhalation of

vapours, especially that of iodine, is often of great value. Of course, small abscesses are to be opened, pieces of exfoliated bone removed, and other ordinary indications carried out. With regard to constitutional treatment, scrofula has already been mentioned. Anæmia and any cachexia may be present, and if so is of the greatest importance. Then as to syphilis. It must always be treated through the system. Some would use mercury for syphilitic ozæna, but the author does not employ it. Sir B. Brodie thought it hastened the separation of dead bone. Mr. Henry Lee had mentioned to the author some cases that benefited by calomel baths. The author would rather iodize than salivate. He gave iodide of potassium in large doses. The dose is to be measured by its effect on the disease, and the ability of the patient to bear it. Although iodide of potassium is mentioned as the constitutional remedy, because it is the most common form of administering iodine, one object of this paper was to bring before the Society the value of other salts of the metalloid. The author had obtained important results in syphilitic diseases of the throat, nose, and mouth, from other iodine salts. It is clearly not the potash which cures syphilis, and feeling this, he gave full trial to iodide of sodium. Soda is a constituent of the frame, and is always more easily assimilable than potash. The sodic salt is more pleasant to the taste. Weight for weight it contains more iodine than the potassic salt. It can frequently be taken by patients who cannot tolerate the more commonly used salt. When abroad, the author learned that his experience was corroborated in the Vienna hospitals. Iodide of calcium is also an excellent preparation. It is easily borne by the system, and much more agreeable to take. It may in fact be used as a substitute for table salt. It is really desirable that the profession should recognise that all the salts of iodine are not so unpalatable as the one in common use. A specimen of iodide of calcium was exhibited, which had been prepared for the author by his accomplished friend, Mr. Tichborne, of the Dublin Apothecaries' Hall. It was when formed a beautiful crystalline mass, but had been broken up.

Art. 164.—*Polypus of the Ear.*

By W. B. Dalby, F.R.C.S., M.B. Cantab., Lecturer on Aural Surgery at St. George's Hospital.

(*The Lancet*, December 9, 1871.)

From a tumour of considerable size, which occupies the whole of the external auditory meatus and projects for some distance from the external orifice, to a growth no larger than a small seed, and which can only by careful examination with reflected light be discovered lying within the tympanum behind a perforation of the tympanic membrane, polypi of the ear present every variety of form and shape. It will generally be found that they have been preceded by disease of the middle ear, which has resulted in a perforation of the tympanic membrane, purulent catarrh with scarlet fever being the commonest of all forms. The immediately exciting cause of the growth seems to be the purulent discharge which attends this condition.

These polypi are at times very vascular, and when they are so there is a good deal of bleeding after their removal. When they do not attain any considerable size, a very common appearance for them to present is a red, fleshy, globular mass projecting through a perforation in the membrane. In such a case they grow from the cavity of the tympanum, and from their situation, by preventing the escape of discharge, sometimes thus become the indirect cause of death in those fatal cases where the lateral sinus and brain become involved.

The reasons for which their removal generally is demanded are the continuous offensive discharge from the ear and deafness, both of which symptoms are their invariable accompaniments. The most usual position from which aural polypi arise is some part of the walls or roof of the tympanum; they also spring from the external meatus and from the tympanic membrane itself. After one polypus has been removed from the cavity of the tympanum, it not unfrequently happens that one or even two more are brought into view. In looking down a speculum where the membrane has been completely destroyed it is not always easy to decide at first sight whether the red mass at the bottom of the meatus is a small polypus or simply granulations on the lining membrane of tympanum. This, however, is ascertained by examination with a probe, when a polypus will be found to move under the touch. Indeed, this should always be practised so as to determine, as nearly as possible, the point from which the growth arises.

With regard to removing the polypus. If it be very large, the best instrument is a Wilde's snare armed with fine gimp. If of moderate size or small, simple rectangular forceps, meeting at the points by two rings, are the most convenient. The lever ring forceps of Toynbee are not often necessary, and at the best will only grasp a small growth. While using any kind, or in applying caustics, the meatus should be illuminated with diffused daylight through the largest speculum that it will hold, the reflector being worn on the forehead and fastened with a band round the head; both hands will thus be quite free. The most effective caustic Mr. Dalby finds to be chloro-acetic acid, applied on a very small camel's-hair brush. In using this, care should be taken not to touch the meatus; and provided this is done, very little pain is felt; but if this should happen, it is relieved at once by syringing with warm water. Potassa fusa and chloride of zinc are not so manageable, and the former is liable to spread on to more parts than it is necessary should be touched. Nitrate of silver is not sufficiently powerful, but it is a very useful caustic to apply to granulations on the membrane or on the surface of the cavity of the tympanum. The liquor plumbi is useful for the same purpose, and may be applied with a camel's-hair brush, or in the form of a piece of cotton wool soaked in it and worn for a few hours every day pressed on to the part. It is well before any of these applications to dry the part carefully with cotton-wool.

Art. 165.—*Wounds and Injuries of the Membrana Tympani.*

By Professor H. Knapp, M.D.

(*The Medical Record*, March 15.)

The causes tending to injure this delicate membrane are quite numerous—penetrating instruments and foreign bodies, by external force or violence, such as fracture of the temporal bone, blows upon the side of the head, falls, &c.; sudden concussions of air, as in pertussis, loud, sharp reports from heavy pieces of artillery.

Gruber says that the membrana tympani bears very high degrees of pressure (from four to five atmospheres) without bursting. He thinks that only in membranes previously diseased a rupture is liable to occur by sudden increase of atmospheric pressure. The bleeding in pertussis and other diseases is not always a symptom of rupture of the membrane, as also the blood-vessels of the conjunctiva and other membranes are very apt to burst in this disease.

The *symptoms* are:—

Pain, mostly of an intense character, at the moment of the rupture. Sometimes, however, no pain is felt.

Fainting, which may be repeated during the next twenty-four hours.

Convulsions are very rare.

A *loud noise* or *crash* at the moment of the rupture, caused by the tearing of the fibres or the sudden pressure upon the labyrinth. The noise persists for some days, in most cases, but gradually diminishing in intensity.

The hearing is impaired in every case where the membrana tympani was normal before the accident, but it may be improved in cases of diseased membrana tympani, for then the membrane is no longer a septum barring the entrance to the waves of sound, the latter having immediate access to the stapes and the membrana tympani secundaria.

Hyperacusis, or *sonophobia*, in rare cases: some noises or tones being very disagreeable.

Loss of the faculty of determining the direction of sound. This symptom is not constant, and soon disappears.

Extravasation, covering the rent in an otherwise normal membrane.

A rent or *fissure* of oval or linear shape; at times the dermoid and radiating layers retract more than the inner layers, and a wound with terraced edges is produced.

The *prognosis* of wounds and injuries to the membrane is generally favourable. Wilde, however, observes:—"It is remarkable that, while we experience the greatest difficulty in keeping open a perforation made with a surgical instrument, accidental openings seldom close." This serves as an argument in favour of Gruber's statement, that the membrane was generally diseased before the perforation occurred.

The *treatment* is simple and can be readily given: Do not syringe, but let the ear alone.

Cleanse the meatus with cotton, and insert into it a light plug of cotton or wool to protect the membrane.

The healing in most cases takes place rapidly and without inflammation. If the latter ensues, the symptoms are those of myringitis.

Art. 166.—*A Case of Injury to the Head.**

By M. Verneuil.

(*Gazette Médicale de Paris*, No. 3, 1872.)

The author regards this as a case without an analogue in science, and one likely to raise very interesting questions in pathological anatomy symptomology, etiology, and differential diagnosis.

The case was one in which a lesion, apparently very slight and the diagnosis of which was from the first completely wrong, was followed by most serious symptoms and caused the death of the patient.

A man aged forty-five years, was admitted into the Lariboisière Hospital on the 14th of December last. This patient about half an hour previously had been taken from beneath an overturned railway carriage.

At the time of his admission he was in a state of extreme excitement and very violent agitation, which prevented the surgeon from obtaining any statement, or subjecting the patient to a sufficient examination. After this agitation had gradually calmed down, the patient was able to reply with the most complete clearness to questions which were put to him.

Examination revealed the following lesions: a small and quite insignificant excoriation on the vertex; a contusion in the right inguinal region; a laceration of the perineum several centimetres in length.

As these lesions could not account for the violent anguish, the cries, the immoderate movements, and the intense disturbances in the respiration, circulation, and calorification presented by the patient at the time of his admission, M. Verneuil ascribed these to the emotion following the accident, and after having ordered a sedative draught he withdrew, postponing until the following day a more thorough examination and a more active medication.

At four in the afternoon the patient became furiously delirious; it was found necessary to restrain him by force, and laudanum was administered.

On the following day M. Verneuil found the patient in a state of profound coma; the eyelids were half closed and the respiration almost stertorous. He thought at first that this condition was one of narcotism, produced by the laudanum; but on examining the patient more closely, he discovered all the symptoms of complete hemiplegia of the right side. There was complete muscular resolution on this side, whilst on the left there was a slight degree of contracture. Paralysis of sensation on the right side was not complete, one could by pricking and pinching the skin excite manifest reflex movements in the right half of the body. The pupils were normal and neither contracted nor dilated; no strabismus. There was absolute aphasia. A catheter introduced into the bladder withdrew between 400 and 500 grammes of non-sanguinolent limpid fluid. The pulse was calm and regular; the temperature of the body 37·7° C.

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* Communicated to the Académie de Médecine.

What was the cerebral lesion giving rise to these symptoms? The case was evidently not one either of cerebral commotion or contusion. The sole logical explanation of this case is to be found in the hypothesis of a compression of the brain by an effusion of blood from a vessel of small calibre, which had given rise to various phenomena of excitement, furious delirium, and as the outpouring of blood increased, to coma. M. Verneuil suspected from the presence of aphasia that the frontal lobe or anterior portion of the brain was the seat of the lesion. M. Broca, to whom he mentioned the case, stated that he would find in case of death an effusion of blood in the region of the Sylvian fissure.

The diagnosis made by M. Verneuil was the following:—Laceration of a small cerebral artery; slow effusion and accumulation of blood over the frontal region of the brain; compression extending to the base of the brain, and affecting—especially the third frontal convolution on the left side—the convolution of Broca.

The treatment consisted simply in the application of a blister and the administration of purgatives; in short, in a but slightly active and expectant therapeutical plan of action; the condition of depression of the patient did not permit more. Towards the fifth day the face was convulsed, the temperature elevated to 40·5° C., and the pulse thready. There was also much agitation, and in the course of the day the patient succumbed.

At the autopsy nothing abnormal was found, on external examination, save a small patch of ecchymosis on the scalp. There was no trace of fracture in the vault of the cranium. The summit of the cranium, the meninges, and the brain, were then removed, but did not expose the least trace of effusion of blood, or of any kind of lesion.

M. Verneuil then inquired into the condition of the arteries of the brain. In examining the base of the cranium, and following along the sides of the sella turcica, the tract of the internal carotid artery, he observed that this vessel, at its point of entrance into the cerebral cavity, was the seat of a thrombosis; it was filled and distended by a coagulum extending through all the ramifications of the middle cerebral artery, and appearing as if the carotid and Sylvian arteries had been injected with tallow. The anterior extremity of the left temporal lobe was the seat of very extensive softening, comprising four-fifths of the corpus striatum, and a part of the optic thalamus on the same side. The brain substance, both grey and white, was altered.

These morbid changes afforded a very satisfactory explanation of the hemiplegic phenomena observed in this patient.

But how had this thrombosis of the internal carotid artery been produced? In following downwards the tract of the vessel, it was found that its calibre and about a finger's breadth of that of the trunk of the common carotid were occupied throughout by a reddish friable clot. From this point to the base of the brain the artery was increased by at least one-third of its size; and at the lower extremity of the clot the calibre was suddenly diminished. By incising the artery at this part it would be readily made out that the internal tunics had been cut across, separated from the outer membrane, and bent forwards by the current of blood; they formed valvular folds, the free borders of which were

directed towards the axis of the vessel. At this point the calibre of the artery was completely obstructed by coagulated blood; the occlusion extended thence from below upward to the whole of the cranial and intracranial portions of the internal carotid, and affected also the whole extent of the middle cerebral artery. The circle of Willis was free, as were also the arteries on the opposite side.

This case raises many interesting questions, and in the first place that of the evolution of the phenomena which were here manifested. It seems probable, thinks M. Verneuil, that the laceration of the common carotid was produced at the time of the accident, and that it was undoubtedly caused by a movement of forcible tension of the neck, although the arterial tissues had not been the seat of any previous morbid change. This laceration would at first have permitted the blood to flow to the encephalon; then, as occlusion of the vessel supervened, it gave rise to cerebral symptoms; the thrombosis gradually extending, hemiplegia affected the whole of the right side of the body; finally, ramollissement, resulting from encephalitis, declared itself towards the fourth or fifth day, at the time when the thermometer indicated a notable elevation of temperature.

This case also raises a very important question as to differential diagnosis. M. Verneuil had diagnosed cerebral compression. Blandin and Malgaigne raised objections against cerebral compression, and doubted the reality of this phenomenon, established as a dogma by J. L. Petit. In the future it will be necessary, in diagnosis, to take into account thrombosis of the cerebral arteries, and to revise Petit's dogma concerning cerebral compresssion.

Art. 167.—*A Case of Hydatid Ranula.*

By Maurice Langier, M.D.

(*Archives Générales de Médecine*, Août, 1871; *Gazette Hebdomadaire*, No. 40, 1871.)

It is very probable that the following case is unique, and its analogue is not to be found in any treatise on pathological anatomy or surgery. It was one of an hydatid cyst of the floor of the mouth, simulating a ranula, whence the name given to it by Dr. Langier. This tumour was observed in a man aged sixty-one years, who was under the care of Professor Gosselin. The tumour made its appearance about six months before, and its development had been so rapid, that two months after the patient had noticed but a small swelling on the left side of the floor of the mouth the tumour had become very troublesome. A surgeon made a small puncture into the tumour, and passed a filiform seton. Inflammation followed, but the swelling again appeared. At the time of the man's admission a tumour of the size of a large walnut occupied the left half of the floor of the mouth, and passed beyond the median line. The tongue was forced upwards and backwards. Mastication was performed with great difficulty, and was almost impossible. The speech was nasal, and scarcely intelligible.

On palpation there was found to be manifest fluctuation, but the wall of the cyst was hard and thick, and of a consistence quite different to that of a ranula. In addition, the presence of some hard and indolent submaxillary glands, rolling under the finger, led to the fear of a complication. Besides this there was no other local symptom of inflammation. The growth was treated by incision into the sac, excision of the superior wall, and cauterization with nitrate of silver. The patient recovered, and at the end of three months remained well.

When the incision was made it gave issue to a considerable quantity of pus, and at the same time some white membrane was expelled. Under the microscope this was found to be composed of amorphous tissue, arranged in layers. The fluid contained in the hydatid cyst resembled pus, and presented a great quantity of compound granular cells, crystals of hæmatoidine and stearic acid, and finally echinococci and hooks.

The author, in comparing an hydatid cyst with the tumours which have been collected under the title of ranula, establishes, as a differential character that may serve for diagnosis, the fact that in an hydatid cyst of the floor of the mouth the enveloping cyst is hard, thick, and resistant.

Art. 168.—*On a Case of Unilateral Atrophy of the Tongue.**

By William Fairlie Clarke, M.A., F.R.C.S., Assistant Surgeon to Charing-Cross Hospital and to the Central London Ophthalmic Hospital.

(*The Lancet*, December 9, 1871.)

Mrs. H., aged forty-five, the wife of an oilman in the north of London, became aware of a tumour in her right breast in the spring of 1869. In February, 1870, she showed it to Mr. Hume, of Devonshire-street, Islington, and he recommended that it should be removed at once, as it had all the characters of a malignant growth. It was accordingly excised on the 16th February. The wound healed slowly, but satisfactorily. On April 15th she complained of cough and slight dyspnœa, the latter only noticeable after exercise. Under treatment the cough soon disappeared, but the dyspnœa continued. On the 3rd of October Mr. Hume was called suddenly, and found her suffering from a deep-seated pain on the right side of the head, of a periodic character, returning each night between 1 and 2 o'clock A.M., and rendering her for some hours incoherent and unmanageable. Many remedies were tried; but the only thing which gave her relief was morphia in grain doses. It was at this date that the atrophy of the tongue was first noticed, though it was not then so marked as it afterwards became. On March 29th, 1871, Mr. Hume was again urgently required to attend,

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* Abstract of a paper read at a Meeting of the Royal Medical and Chirurgical Society, November 28th, 1871.

and found the patient suffering from all the old symptoms, but in an aggravated degree; and in addition there was an alarming dysphagia, together with paroxysms of suffocation, which recurred about three times in the twenty-four hours. On being asked to protrude the tongue she always appeared unable to do so at first; and, on the request being repeated, would reply, "Wait a minute." Then, after a few moments' deliberation, she put it out very slowly. The tongue was puckered and crimped along its whole right side from base to apex, though these appearances were the most marked at the anterior two-thirds. An actual loss of substance had taken place, but it was bounded exactly by the median raphé; and the contrast between the *plumpness* of the left side and the shrivelled aspect of the right was very striking. When it was protruded, there was no deviation to either side. Articulation was slow and difficult. There was great pain along the right side of the neck, with a certain fulness and turgescence of the vessels; but no tumour could be felt in any part of the mouth or neck. Together with these symptoms there was general cachexia and great prostration of strength. From this time the dysphagia and dyspnœa gradually became worse; and on the 7th of June, in one of the attacks of suffocating cough, the patient died. At no time during her illness had there been any paralysis of the extremities, and her intellectual faculties remained clear throughout her whole illness.

Unfortunately no autopsy could be obtained; but looking at all the circumstances of the case, the writer thought there was good reason to believe that the ninth nerve on the right side was involved in a secondary cancerous tumour, such tumour being situated either within the cranium or at the upper part of the neck, and pressing upon the right hypoglossal nerve, and more or less implicating the pneumogastric and glosso-pharyngeal nerves as well.

The writer then proceeded to compare with this case two other instances of well-marked unilateral atrophy of the tongue: the one related by Dupuytren in the "Leçons Orales" (lecture on Hydatid Tumours); the other by Sir James Paget, in the third volume of the *Transactions of the Clinical Society*. The experience of Romberg and of Bidder was adduced to show that this remarkable condition of the tongue may be produced by a lesion of the ninth nerve, and to establish the same point the author related an experiment that he had made. On October 25th, he divided the right hypoglossal nerve in a rabbit, and took out a piece about a quarter of an inch in length. Immediately after the operation, and during the whole time that the animal was under observation, the tongue was strongly protruded to the right side. On November 27th the rabbit was killed. It was found that the nerve had united by a soft gelatinous and highly vascular substance, of about twice the ordinary calibre of the nerve. The right side of the tongue, along its posterior half, was slightly wasted and flattened.

The preparation was exhibited, and an outline sketch, illustrating the case which had been related, also accompanied the paper.

Art. 169.—*On Cancer of the Sublingual Glands.**

By M. Verneuil.

(*Gazette Hebdomadaire*, No. 41, 1871.)

"I am about to direct your attention to a frequent and grave affection: epithelioma, or caneer of the sublingual glands. The subjects of this affection generally come to us with ulcerations which have been cauterized and tormented for several months, and in such a manner as to render surgical intervention difficult. Authors scarcely allude to cancer of the sublingual glands. I have seen a dozen cases of this affection. The affection is generally presented in the form of sharply-cut linear ulceration at the floor of the mouth. The base is indurated; the ulceration extends sometimes towards the lingual mucous membrane, sometimes towards the periosteum. Difficulty in deglutition, salivation, pain radiating to the neighbouring parts, even to the ear, are the chief symptoms: this extension of the pain is probably due to exposure of the inferior maxillary nerve. All kinds of caustic agents have been applied to these ulcerations. The diagnosis is easy. Aphthous or syphilitic ulcerations do not occupy this position, and have not indurated bases.

"I have had occasion to study this affection anatomically, and have observed that the seat of the disease is the sublingual glands; the acini are increased to thrice their normal size, the epithelium is altered, all the cells present large nuclei, each containing three bright nucleoli. The prognosis is extremely serious. I have seen recoveries from epithelioma of the tongue and of the inner surfaces of the cheeks, but when the sublingual gland is the seat of the disease relapse occurs rapidly after operation, even before the cicatrization of the wound. This is one of the most frequently fatal forms of epithelioma. I have performed several operations; have enucleated the tumour and removed it in different ways by means of the écraseur, but all to no purpose; relapses were speedy and death rapid."

Art. 170.—*A Case of Stricture of the Œsophagus.*†

By M. Demarquay.

(*Gazette Hebdomadaire*, No. 4, 1872.)

"I have the honour to present to the Society a preparation taken from a patient upon whom I had performed catheterism of the œsophagus. The patient was a youth aged fifteen years, who, in the month of May, 1871, drank by inadvertency a glassful of solution of potash. This was vomited, but dysphagia shortly afterwards occurred and increased to such a degree that the patient was not able to drink. I saw the patient three months after the accident; I then passed an ordinary No. 10 catheter, by means of which I could supply him with fluid nutriment; I afterwards proceeded to dilate. In the course of a short time the patient was able to eat and drink. He did not return

* Communicated to the Société de Chirurgie of Paris. † Ibid.

to me for some time, but when he did he could no longer swallow. I attempted to pass some olivary dilators, but could not get the smallest of these through the structure. This was on the 8th of September. Whilst I was attempting to pass one of these instruments the patient suffered much pain; he was able to drink, however, and declared that he could feel the fluid passing into his stomach. In the evening he was feverish, and I discovered that he had pleurisy. The patient was treated by M. Cazalis, and died on October 4th. One sees from the preparation that there is a perforation of the œsophagus communicating with the focus of an extensive purulent pleurisy. The communication is large, and receives a large sound. I believe that in this case there was softening of the œsophagus so advanced that at the least contact the walls were ruptured. In a case of cancerous stricture of the œsophagus the patient after catheterism drank a little and then had a violent fit of coughing; here a communication had been established between the œsophagus and one of the bronchi. Since my experience in these cases I always exercise the greatest prudence in catheterism of the œsophagus."

Art. 171.—*A Case of Median Fracture of the Inferior Maxillary Bone cured by Osseous Suture.**

By M. Polaillon.

(*Gazette Hebdomadaire*, No. 45, 1871.)

A man aged twenty-nine years fell from a dray of which he had charge. A fracture of the lower jaw, situated between the first and second incisor teeth on the left side, was the result of this accident. The direction of this fracture was vertical. The gums and the buccal mucous membrane were much torn. The fragments, separated by an interval of about one centimetre, were very moveable. Ligation of the teeth and the application of a gutta-percha splint moulded over the alveolar border were carried out, but with no success. On October 11th suture of the inferior maxilla was practised in the following manner:—

"At a point about a centimetre externally to the fracture the left fragment was pierced by a perforator, at the end of which was a hole through which a silver wire could be easily passed. When the perforator had passed beyond the posterior surface of the maxillary bone, the wire was passed through the hole, and then brought forwards by the needle to the front of the jaw. The right fragment was then perforated in a similar manner. The two fragments could then be brought into exact coaptation by means of the wire suture which formed a loop behind them. The anterior surface of the gum was then covered by a small plate of gutta percha, over which the two ends of the suture were twisted. The fracture was maintained in a state of perfect reduction. The maxillary bone was perforated near the extremities of the dental fangs and in the intervals between these. This operation was not followed by any bad symptom. At the end of twenty-seven days the fracture was consolidated. The suture was withdrawn on the 7th of November.

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* Communicated to the Société de Chirurgie of Paris.

Art. 172.—*Resection of the Œsophagus.*

By Professor Billroth.

(*The Lancet*, Jan. 6.)

In the current number of Langenbeck's "Archiv," Professor Billroth, of Vienna, contributes a most interesting and suggestive paper bearing the title, "Ueber die Resection des Œsophagus." He states that some time ago, after a post-mortem examination of his first patient affected with carcinoma of the œsophagus, the possibility suggested itself of making a resection of this part of the alimentary tube. The fact that the lymphatic glands in the neighbourhood of the diseased part are not generally affected, and the partial success which had hitherto attended the operation of œsophagotomy in this disease, together with the analogy of external urethrotomy in cases of gangrene or ulceration of the urethra, seemed to lend support to such an idea. The passing, moreover, of bougies through cicatricial tissue was far preferable to the manipulation of such instruments in a tube with ulcerated and weakened walls.

On April 21st of last year, a large dog was put under the influence of chloroform, and a piece, about an inch and a half in length, was cut out of the whole circumference of the œsophagus. The lower end of the divided tube was then fastened by a couple of sutures to the skin at the margin of the external wound. Up to the 26th of the same month the animal was fed with milk through a tube passed into the wound, but on and after this date the tube was passed *viâ* the mouth. A week after the operation the sutures were removed. By the end of June the fistulous opening had completely closed, and the process of healing would have been quicker if it had not been that the dog, like human patients, dissatisfied with "milk diet," purloined the more solid food of neighbouring victims to science. After the closure of the œsophageal fistula, which took place at the end of June, the tube was daily dilated by a bougie of the diameter of a large index finger. After the healing of the wound the dog was in capital condition, eating meat, potatoes, &c., but the variety of fare was not allowed to extend to bones. On July 26th the animal was killed with cyanide of potassium; and all that was found as a trace of the operation was an annular scar, scarcely half a line in width, and, moreover, easily dilatable.

Art. 173.—*Gastrotomy in Cases of Strictured Œsophagus.**

By Thomas Smith, F.R.C.S., and William MacCormac, F.R.C.S.

(*Medical Times and Gazette*, June 22.)

Mr. Thomas Smith read a paper on a case of Strictured Œsophagus, for which gastrotomy was performed. The patient, A. B., aged thirty-eight, was under Dr. Black's care at St. Bartholomew's Hospital. He had suffered from difficulty in swallowing for eight months. For a fortnight before admission he could take no solids, and for a week (as he said) no food of any kind. Treatment by bougies proved of no avail, as nothing would pass the stricture. There was no external evidence of

* Read at a Meeting of the Clinical Society of London, May 24.

disease of any kind; no swelling, tenderness, or pain; no expectoration of blood or matter. On March 21, 1872, gastrotomy was performed, and an india-rubber tube was introduced. Through this tube he was fed. The patient went on well for four days, and then was troubled by cough, which seemed to set up peritonitis, of which he died at the end of a week. On examination after death, the cause of obstruction was found to be a ring of epithelial cancer surrounding the œsophagus opposite the bifurcation of the trachea, producing complete obstruction, and involving the pneumogastric nerves. The stomach was firmly adherent to the skin and to the parietal peritoneum. Death was caused by peritonitis. Mr. Smith remarked that in this case the operation had been done under circumstances as favourable as were ever likely again to occur. The patient was not excessively exhausted. There was nothing in the local disease to have caused or even accelerated his death at the time when that occurred. The operation was easily performed. There was no failure in the process of union afterwards, and no hindrance to the administration of food; yet the case terminated as have all cases of gastrotomy for obstruction of the œsophagus. The author stated that there were now twelve recorded cases, all of which had ended fatally; and he expressed an opinion that, with our present experience of the dangers of the operation, it ought not to be undertaken when death is imminent from any other cause than starvation.

Mr. MacCormac gave the particulars of two cases in which gastrotomy had been recently performed in St. Thomas's Hospital for œsophageal obstruction. In the first case, the patient was operated on by the author on March 19. He survived forty-five hours. In the other, Mr. Le Gros Clark operated on May 7, the patient living for six days afterwards. H. S., aged forty, was admitted to St. Thomas's Hospital under the care of Dr. Clapton. Up till the commencement of the present illness, about twelve months before, he had enjoyed excellent health. No history of syphilis or of cancer was obtained. One day he suddenly experienced difficulty in swallowing. This difficulty, with periodical remissions, steadily increased until he sought Hospital treatment. On admission, he was weak, emaciated, and scarcely able to swallow even small quantities of fluid. He did not complain of pain except when trying to swallow food, but the effort to do so always induced most distressing retching and cough. There had never been either pus or blood in the discharges. After consultation, it was deemed expedient to try to feed the man through an artificial opening made in the stomach, through the abdominal wall. Accordingly, at ten o'clock on March 19, Mr. MacCormac made an opening into the stomach, securing the cut edges of the viscus to the wound in the abdominal parietes by means of interrupted suture. The patient bore the operation well. There was no shock, and the vomiting and cough completely disappeared, giving him very marked relief. Food was introduced into the stomach by an india-rubber tube with a funnel, which allowed the fluid to gravitate into the organ. Surgical interference came too late, however, to make any material change in the patient's condition. It did not, perhaps, hasten his end; but he became weaker, and died on May 21, forty-five hours after the operation. An examination after death showed that a cancerous stricture existed low down in the œsophagus, and that by the spread of the disease the lung, in which was found

a gangrenous abscess cavity, had become seriously implicated. The edges of the stomach were glued by lymph to the parietes, and in the abdominal cavity there was no trace of peritonitis. In Mr. Clark's patient the antecedent history was very similar to that of the last Difficulty of swallowing suddenly appeared during eating, and this steadily increased until he came to Hospital, when he finally became unable to swallow almost anything. Some attempts were unsuccessfully made in each case to pass a small elastic bougie. After consultation, the operation of gastrotomy was performed by Mr. Clark on May 7. Food was first introduced into the stomach thirty hours after the operation. The patient experienced great relief for four days by reason of the cough and efforts to vomit completely ceasing; but then the cough returned, the adhesions partly gave way, and he died six days after the operation. Very extensive epithelial disease was found in the œsophagus, and an ulcerated opening had been formed between it and the lower part of the trachea. There was some peritonitis, but it was limited to the neighbourhood of the wound. Mr. MacCormac considered that the operation itself was not necessarily dangerous, and that the relief from the great distress, inducing coughing and retching, caused by futile efforts to swallow, which was observed in a marked degree to follow the operation in both these cases, was encouraging. Even although the operation only prolonged life a little, it seemed possible to give great comfort by it, just as in a similar way the operation of colotomy gave great relief in cancerous disease of the rectum. He did not consider that surgeons were as yet quite in a position to decide whether or not gastrotomy was a proper operation to perform for impassable stricture of the œsophagus. He thought further experience, especially of operations performed in an earlier period of the disease, desirable, and would not on another occasion hesitate to perform gastrotomy in a suitable case.

Art. 174.—*On Concussion.*

By John Ashhurst, Jun., M.D., Surgeon to the Episcopal Hospital, Philadelphia.

("Principles and Practice of Surgery," 8vo, pp. 1011; Philadelphia, 1871.)

In reference to concussion, Dr. Ashhurst says:—

"Every case of concussion is, I believe, accompanied by *shock*, and in many instances the symptoms of the latter condition alone can be recognised. . . . . Even in the intermediate cases, which are often spoken of as typical instances of concussion, though, as a matter of convenience, we may trace their clinical history, and divide it into stages, we cannot point to any symptoms which definitely characterize the lesions of concussion, apart from those of other cerebral injuries. Indeed it would be better, I think, if we could dispense altogether with the term concussion as denoting a *condition*, and look upon it as merely indicating the *cause* of what have been described as *concussion lesions*—viz., *cerebral contusion, laceration, extravasation.* . . . . I regret that I cannot agree with those surgeons who consider the diagnostic marks between compression and concussion to be plain and easily recognizable. . . . . Though

in certain cases we can say without hesitation, in view of the one-sided paralysis, profound coma, and other symptoms mentioned, this is compression or that is concussion, there are other cases in which it is impossible to draw such a distinction; compression may disappear spontaneously, leaving concussion, while concussion, by a continuance of intracranial hæmorrhage, may end in fatal compression."

Of its treatment the author writes:—

"As a matter of fact it is very seldom indeed that a case of concussion requires any stimulants at all. . . . . [After reaction has taken place], rest, both mechanical and physiological, should still be enforced; and if the patient be restless, the surgeon need not fear to give opium. I am aware that there is a good deal of difference of opinion as to the propriety of administering opium in injuries of the head, but surely there is nothing to contra-indicate it in what we know of the pathology of these cases, while its soothing and calming effect is exactly what is required."

He "would restrict the use of the trephine within very narrow limits; it is not to be used with the idea of relieving compression, nor with the idea that there is any special virtue in the operation to prevent encephalitis. The trephine should be used merely as Hey's saw is used, mechanically, to enlarge an opening which would be otherwise too small to allow the surgeon to carry out plain therapeutic indications."

Art. 175.—*Complete Recovery after Removal of the Body of a Cervical Vertebra.**

By William Ogle, M.D., F.R.C.P.

(*The British Medical Journal*, Jan. 20.)

In this paper a case was narrated, of which the following were the chief points. A man, after suffering for some months from sore throat, became an out-patient of St. George's Hospital. It was found on examination that some bone was exposed at the back of the pharynx; but the patient suffered so little inconvenience from this, that he could not be persuaded to become an in-patient. The man got into the habit of moving the exposed bone with his fingers, and at last loosened and removed it himself. On maceration, the piece thus removed was found to consist of the body of one of the cervical vertebræ and a small portion of the body of a second one. After remaining for some months as an out-patient, the man was persuaded to enter the hospital. He was placed on his back, and his head fixed; and remained in this position six months. During this time he expectorated numerous spicules of bone, and what appeared to be portions of fibro-cartilage. The lesion eventually healed completely; and the man at the present time—two years since the lesion—is able to occupy himself with the heaviest farm-labour, and to amuse himself with field sports. There is no visible deformity of the neck, nor any other sign of what has occurred except a slight stiffness in rotating the head. The piece of bone was exhibited.

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* Read at a Meeting of the Royal Medical and Chirurgical Society, January 9th.

(B) CONCERNING THE TRUNK.

ART. 176.—*On the Treatment of Hydrarthrosis by Aspiration.*

By Dr. DIEULAFOY.

(*Gazette Hebdomadaire*, No. 41, 1871.)

"*The operation.*—At the time of withdrawing by aspiration the fluid contained in the articulation, the affected leg should be extended, since in this position the articular surfaces of the femur and tibia are applied to each other over a considerable extent, and the fluid is forced forwards so as to render prominent the patella and the tendon of the quadriceps. It is a good plan to surround the articulation with a caoutchouc band, which possesses the advantage of exercising uniform and continuous compression during the discharge of the fluid. The point of puncture will vary according to the inclination of the surgeon: I prefer the superior cul-de-sac of the synovial membrane at the level of the upper extremity of the patella, and about two centimetres externally to this bone.

"To perform the puncture the surgeon should make use of one of the hollow needles of the aspirator. The No. 1 needle, the diameter of which is three-fourths of a millimetre, seems to me to be too fine, although it has often been utilized with advantage. I prefer the No. 2 needle, the diameter of which is one and a quarter millimetre. This needle, furnished with two openings near its extremity, fulfils every condition and has never given rise to any accident.

"The aspirator having been emptied of air, the needle is put into communication with it by means of a tube of caoutchouc, and is then introduced into the tissue at the point fixed upon for the puncture. The stop-cock corresponding to the aspirator is then turned and the needle is carried on until a jet of fluid appearing within the glass pump indicates that it has penetrated the articular cavity. The fluid is then withdrawn to the last drop. It is useless to compress the joint, and this manœuvre would also irritate the serous membrane by multiplying its points of contact with the needle.

"As soon as the fluid has been evacuated the needle is withdrawn and the puncture covered, though this proceeding is not absolutely necessary, by a small piece of goldbeater's skin and a few drops of collodion.

"Now it is necessary to make compression, and very special care should be taken in this part of the treatment, as it is one of the essential elements of success. The knee is to be surrounded with a thin layer of wadding, over which exert energetic compression with a bandage. But this alone will not suffice; it is necessary to surround the foot and the whole leg with a roller, in order to guard against œdema. The leg should be somewhat inclined, so that the foot, may be the most elevated part.

"Forty-eight hours after the puncture the dressing is to be removed so that the surgeon may observe what has occurred. With regard to this point there are two classes of cases: in one the fluid does not accumulate, or at least it collects again in very small quantities; the compression should then be reapplied; but if, on the contrary,

the effusion is very great, aspiration should be again performed and compression applied as before. On the following day the same manœuvre is to be recommenced, and so on for several days until the time of cure. The introduction of the needle causes very little pain; and it is a very easy matter to do away with this by producing cold anæsthesia with Richardson's ether-spray apparatus, or by applying a mixture of salt and ice.

"*Value and critical estimate of the proceeding.*—Is the treatment of hydrarthrosis by aspiration superior to other proceedings? Has it inconveniences, has it advantages? Such are the questions which we ought to ask ourselves. I believe that I am in a position to affirm that the operation such as I have described is entirely free from danger. I have seen it practised, and have practised it myself, on hundreds of occasions in the knee-joint, and have never noticed the slightest accident. There is no pain if local anæsthesia be applied to the seat of puncture; the operation is as simple and as easy as the prick made with the needle of an hypodermic syringe. The introduction of air into the articulation is impossible.

"It remains to be found out whether this plan of treatment has any advantages. In painful hydrarthrosis and those which occur very rapidly after chilling or in acute articular rheumatism, the pain, which is sometimes extremely acute, ceases immediately on evacuation of the fluid; the movements of the joint which previously were difficult, can now be performed without any trouble. Such results are not to be obtained so readily from the application of iodine and blisters.

"With regard to the direction of the treatment, this is variable according to the causes which have given rise to the hydrarthrosis and according to the individuals who are thus affected. This question has not yet been well elucidated, and it is hardly possible to say from the examination of a pathological fluid taken from a serous cavity, whether there is a more or less marked tendency for the effusion to be reproduced. Whether the fluid be deficient in coagulable material, like that of ascites or hydrocephalus, whether it be very fibrinous as in hydrarthrosis, or whether it be more or less rich in leucocytes, is of little importance: these are, in the reproduction of pathological fluids, conditions which escape us, and I think it better rather to abstain than to hazard a classification which as yet reposes upon a too uncertain basis. The notions which we hold concerning the tenacity of the effusion are very indistinct, and if we have admitted three groups relating to the variable duration of hydrarthrosis, it is only for the purpose of establishing facts and not of pretending to seek their interpretation. One may, it is true, by taking an average find out with regard to the duration of the affection, the advantages of aspiration over other methods; but this proceeding, rigorous in the exact sciences, seems to me to be hardly applicable in medicine, for one is compelled to associate cases which are too dissimilar.

"It has been demonstrated by experience that a certain number of painful voluminous hydrarthroses of several days' duration, rapidly yield after one or two aspirations followed by compression; under other circumstances the treatment has lasted for twelve or fifteen days. There is here, therefore, a marked difference from the methods of treatment in ordinary use which have to be continued for several weeks.

"I hold then that, except under special circumstances, one ought, in the treatment of hydrarthrosis, to abandon the following different medications, none of which enjoy any great favour:—1. Calomel given to the extent of salivation—a fruitful source of stomatitis and a treatment poor in good results; 2. Emetics in large doses, recommended by M. Gimelle; 3. The local application of iodine and of blisters.

"It seems to me that aspiration or repeated aspirations followed by compression ought to be preferred to these different methods. When fluid, whatever may be its nature, accumulates in a serous cavity and when this cavity is accessible, without causing danger to the patient, to our means of investigation, our first care ought to be to withdraw this fluid. If it be renewed it should be withdrawn again and several more times if it be necessary, *in order to exhaust the serous membrane by a method quite mechanical and altogether harmless, before thinking of modifying the secretions by irritating and sometimes formidable agents.* And if aspiration within the limits I have indicated does not suffice, I hold that it will be necessary, without any intermediate action, to have recourse to some irritating injection."

Art. 177.—*On Aspiration in the Reduction of Hernia.*

By M. Demarquay.

(*Medical Times and Gazette*, June 1.)

At the meeting of the Académie de Médecine on May 21, M. Demarquay presented a man, twenty-one years of age, in whom he had reduced a strangulated, congenital inguinal hernia by the aid of aspiration. On May 5 a tumour appeared in the left groin, accompanied by severe pains and vomiting, which persisted next day. At the end of twenty-four hours he was taken to the Paris Maison de Santé, where the taxis was employed without success. Ice was applied during the next twelve hours, when M. Demarquay saw the patient. His features had undergone great change, and fever was set up. A congenital, elongated, voluminous inguinal hernia was found to exist, and M. Demarquay paid the more attention to other measures inasmuch as he had never succeeded in curing this description of hernia by operation. He applied carefully the taxis, while the patient was put into a deep sleep, with no effect, and he determined to try the effect of removing the intestinal liquids and gases by means of aspiration. A fine trocar was passed into the centre of the tumour, and, by means of Potain's aspirator, about 120 grammes of intestinal liquid were drawn into the recipient. The tumour subsided completely, and, the trocar having been removed, some minutes were allowed to elapse without touching the tumour, in order to observe whether new liquids or gases would enter the strangulated intestine. No renewal of the tumefaction took place, and very slight pressure upwards sufficed to procure the return of the intestine into the cavity of the abdomen. The patient was kept quiet, and on low diet, fractional doses of opium being administered. No ill consequences followed. The case M. Demarquay regards as striking, and he proposes to apply this new mode of treatment—1. In all con-

genital hernias and to recent hernias which become strangulated at the time of their formation. 2. To old hernias which were quite reducible a few days prior to strangulation, and in large umbilical hernias that have been recently strangulated. 3. Aspiration, which has for its object facilitating the employment of the taxis, should only be employed at an early period, when one can be well-nigh certain of returning into the abdomen the intestine in an unaltered state and capable of resuming its functions.

Art. 178.—*On Wounds of the Liver terminating in Recovery.*

(*Gazette Médicale de Paris.*)

Although in the majority of instances wounds of the liver are serious, and although those injuries are considered so by the majority of authors, this is not always the case. To be convinced, it will suffice to glance over the following résumé of some reports made by French surgeons.

The first occurred in the practice of M. Desprès. After the battle of Sedan this surgeon received into his ambulance a soldier, whose right hypochondrium region had been traversed from back to front by a bullet. The projectile had entered at the renal region; then continuing its course it arrived under the integument corresponding to the front of the ninth rib.

A few days later this part presented a small tumour, which soon became red and fluctuating, and on opening this a bullet was withdrawn, some pieces of cloth, and a small buckle. A fistulous tract remained for ten days, after which the whole wound closed, and the patient was discharged without having presented any other symptom.

M. Verneuil reports a case of the like kind. In this instance, the liver had been pierced through from left to right, from the left to the right hypochondrium. The patient was a young man, who in an attack of delirium had applied a revolver to his left side. On his admission into the hospital an orifice was observed on the left side, and at a diametrically opposite point of the right chest was developed a blood tumour. A minute examination of the chest did not reveal any symptoms pointing to lesion of the respiratory organs. There was no expectoration of blood, nor any secondary pleurisy. On the fourth day there was jaundice, which increased in intensity until it reached its maximum on the tenth day. The man was as yellow as an orange. After the tenth day, the appetite returned, and the general condition became so satisfactory that the patient in the course of a few days was discharged at his own request.

M. Boinet states that he has had occasion to see two cases of complete recovery, without any bad symptoms, after stabbing wounds.

We would finally recall the many instances of puncture of the liver performed in the treatment of hepatic hydatid cysts, and even for pleuritic effusion, in which no bad symptom was manifested. This proves that the gravity of wounds of the liver may have been exaggerated, and that it is necessary for us to investigate those organic conditions, which, in a certain number of cases, determine this freedom from harm.

ART. 179.—*Wound of the Spinal Cord in the Dorsal Region; Paralysis of Motion more Pronounced on the Left Side; Anæsthesia on the Right Side; Hyperæsthesia on the Left Side; Unilateral Slough on the Right Buttock; Spinal Arthropathy of the Left Knee.*

By M. VIGUES.

(*Gazette Médicale de Paris*, No. 1, 1871.)

"On February 4th, 1850, A. C., aged twenty-eight years, was admitted into the Saint Louis Hospital, under the care of M. Nélaton. This patient had received a sword-wound at the back of the thorax on the right side, between the ninth and tenth dorsal vertebræ, and at a point about thirty-four centimetres externally to the line of the vertebral spines. The sword had penetrated to an extent of more than six centimetres, and had been directed upwards and inwards towards the medullary canal. The wounded man was not able to get up.

"The following was the state of the patient when first visited:—He complained of violent pains in the lower limbs; the left inferior extremity presented an almost complete paralysis of motion; some slight movements only could be made out at ends of the toes; the sensibility, however, of this limb was much exaggerated, and the slightest contact caused violent pains. This hyperæsthesia was then arrested almost at the level of the iliac crest, but in the course of a few hours invaded the hypochondrium and the left part of the hypogastrium. On the left side also the thermic sensibility was equally perverted. A body heated to 30° C., gave to the patient the sensation of burning, whilst a compress dipped in water of the temperature of the ward produced a sensation of very intense cold. Tickling was very painful.

"In the right abdominal limb the phenomena were quite different. The movements which in this part had been totally impossible were somewhat restored; sensibility on contact, though somewhat less, still existed; sensibility to pain had ceased. Thermic sensibility was also abolished; the patient was conscious of the contact of the body, but could judge neither of the temperature nor of the degree of humidity or dryness of this body. Tickling gave but a sensation of simple contact.

"After the wounding, the patient had complete retention of urine and of fæcal matter.

"On the evening of February 6th, all the symptoms commenced to subside. The movements were always less pronounced on the left than on the right side; the hyperæsthesia disappeared from the left gluteal and lumbar regions. On the right side the patient could feel the pricking of a pin, but could not tell the seat. He was soon able to pass his water himself. The retention of fæcal matter gave way to incontinence.

"On February 17th it was remarked that the left lower limb, which since the wounding had been more sensible than in the normal condition, *had increased in size*, and that the skin was rough and dry. Within

the articulation of the knee a sufficiently considerable quantity of fluid had been collected to elevate the patella for about a centimetre above the condyles.

"On February 20th, there was observed, on the right side of the sacrum and in a corresponding part of the buttock, a sore, which had not been complained of or felt by the patient. Over a space of about seven or eight centimetres the epidermis alone was detached, leaving exposed the dermis, which was ulcerated at several spots.

"On February 25th the sore had not extended; motion and sensibility gradually returned, and on March 20th the stools, for the first time after the wounding, were passed voluntarily. Shortly afterwards the patient was able to sit, to get out of bed, and to walk about with the help of crutches. He left the hospital on June 15th, after a sojourn of four months and a half. The sensibility in the right inferior limb had not returned to its normal condition; the amelioration on the left side still persisted. The patient lived for two years afterwards, and had regained his former condition without preserving any trace of his wound."

MM. Joffroy and Solomon, in some remarks upon this case, state that here, as likewise in a case observed by themselves, there was incomplete section of the cord, involving more particularly the left half; paralysis of movement in the two lower limbs, but affecting more especially the left; disturbances of sensibility in the inferior limbs, consisting chiefly in an anæsthesia on the right side, and hyperæsthesia on the left side. Finally, simultaneous development at the third week after the commencement of an unilateral sore on the right buttock, and arthropathy of the left knee. So great a resemblance in all the details of two cases of this kind is undoubtedly a powerful argument in favour of the influence exercised by lesion of the cord on the development of the sore and of the arthropathy of the knee. It may be called to mind that M. Chariot has established the tolerably frequent existence of an arthropathy of this nature in sclerosis of the posterior cords, and that in one of these cases, where the left shoulder was the seat of this complication, examination of the cord revealed a morbid change in the anterior horn in the grey substance corresponding to the cervical region.

Art. 180.—*Treatment of Gonorrhœa.*

By J. L. Milton, M.R.C.S., Surgeon to St. John's Hospital for Diseases of the Skin.

In an essay on the pathology and treatment of gonorrhœa, Mr. Milton divides all cases into two classes—those which do and those which do not admit of a plan of abortive treatment. Those adapted for the abortive plans of treatment are:—1. Cases when the patients present themselves before great pain and running have set in. 2. Those who have had gonorrhœa previously, and in whom the present attack does not appear to be very severe. 3. Those cases where the patient is desirous of an immediate cure at any price. In following out this plan, it is indispensably necessary that the patient should be able to rest for the

entire day after. The patient should make water, and should then be injected with a five-grain solution of nitrate of silver, by means of a syringe with an electro-gilded nozzle an inch and a half long.

If no smarting be felt, a ten-grained solution may be injected. The penis may then be bathed in hot water, or a hot bath taken to relieve pain and irritation. Four grains of calomel are to be taken, followed by a seidlitz powder, or citrate of magnesia every two hours, till several loose stools are obtained, and no food should be allowed except a little warm tea or gruel. After every stool the patient should inject with a solution of sulphate of zinc containing from three to five grains in the ounce, and hot fomentations should be systematically repeated. The next day the discharge is usually thin and small in quantity, and in a day or two will have quite disappeared.

The abortive plan of treatment is applicable to but very few cases, and Mr. Milton proposes another plan, which he considers to be the best adapted for all ordinary cases. This consists in the administration of the acetate of potash in combination with the spirit of nitric ether. The best proportions seem to be five drachms of acetate of potash with three drachms of spirit of nitre, and half an ounce of compound spirit of juniper or two or three drachms of spirit of nutmeg, in a six-ounce mixture. In more severe cases the chlorate of potash may be added, and in those of unusual severity he would begin with it at once. With these he gives a calomel, colocynth, and hyoscyamus pill, or the following:—Pil. aloes et assafœtidæ gr. j; calomel, gr. vj; podophylli resinæ gr. ij; ol. cinnamomi. M. Ft. pil. xij. Sumat ij hora decub. Under this treatment the discharge soon becomes materially diminished, and in forty-eight hours is thinner, less coloured, and more mucous, and these effects are produced with equal rapidity in long-standing and in recent cases, and in women as well as in men.

Art. 181.—*On the Treatment of Bubo.*

By Professor Zeissl.

(*Medical Times and Gazette*, May 4, 1872.)

In a paper published in the *Wiener Med. Wochenschrift*, March 9, Professor Zeissl, of Vienna, describes the great advantages which he has derived from what he calls the "abortive and methodical treatment" of bubo and other acute and subacute glandular enlargements of the groin and thigh. "Every one," he observes, "who has had much to do with such is well aware of the difficulties and sometimes even dangers which they may give rise to, and cannot but be anxious for a means which may prevent their suppuration and its tedious consequences." Engaged in Hebra's division of the hospital for more than twenty years, Dr. Zeissl was always on the look-out for some such means, and had often, both in private and hospital practice, derived remarkable benefit from the application of the acetate of lead, as recommended by Behrend and Cooper. In 1869 he was appointed to take charge of the syphilitic wards in the hospital, some of which had a bad reputation (of late much redeemed)

for their sanitary conditions. He soon found that such conditions told sadly on open buboes, which became frightfully gangrenous. The proximity of these wards to the dead-house seemed one cause of their insalubrity; and in order to avoid the contact of wounded surfaces with the infected atmosphere, the experiment was tried of opening and discharging buboes under water, and then closing them with a gypsum bandage. In some cases primary union took place, but in many others the cavity filled again, and the skin covering the abscess became so thinned, in spite of all preventive measures, that at last it had to be opened over a considerable extent, either by cutting instruments or caustics. Every attention to cleanliness and ventilation, &c., the application of carbolic acid according to Lister's and other plans, all failed to secure the prompt healing of such ulcers.

The author undertook no operation upon these inflamed glands without fear and trembling, so that at last he resolved to treat the buboes with lead, which he had found so useful in private practice, and only opening them quite exceptionally. This treatment has now been pursued during two years in the following manner:—When, on first seeing the patient, hope may still be entertained of preserving the skin intact, it is carefully cleansed from all adhering dirt and plaster, and depilated. The patient then goes to bed, and a compress which has been soaked in a solution of basic acetate of lead is applied to the tumour, wetting it as often as it becomes dry. Even at the end of three or four days the skin covering the enlarged gland feels thicker and firmer—tanned, as it were. The fluctuation, which on close examination was at first perceived, either has gradually disappeared altogether or become much less perceptible; and on pressing the tumour with the fingers it is found already to impart a doughy feeling. If the fluctuation on the commencement of the treatment is very plain, or becomes so, a puncture in a perpendicular direction by a pointed bistoury should be made into the thinnest portion of the skin, taking care that the puncture does not become an incision, and is only large enough to secure the gradual and continuous discharge of the pus, which should be aided by moderately firm pressure by means of a compress soaked in the lead, and over which a roller is applied. The bandage also brings the excavated skin into contact with the underlying parts, and favours their union. The replacement of the purulent contents which first flow out after a few days' application of the bandage, by a more serous lymph-like fluid, is always a favourable circumstance. Care must be taken to prevent any of the linen used in the dressing entering into the aperture, as repeated irritation of this kind may easily convert the simple puncture into an ulcer. If the swelling consists of the (so-called) multiple bubo, and a spontaneous rupture has already taken place at one or more points, the following iodine plaster may be advantageously substituted for the lead compress:—Plumb. iod. ʒj, ext. bellad. ℈ij, emp. diach. c. ʒj., ung. elemi q.s. ut f. empl. molle. As long as only a thin lymph-like fluid is discharged through the puncture or spontaneous apertures, and no symptoms of renewed inflammatory action are present, and still more if erysipelas be prevalent, we should abstain from any removal of the skin. But if one or more sources of pus lie deeply under the fascia superficialis, the cavity of the abscess should be laid open, employing the Vienna paste or the knife, with the usual

precautions. In many cases a simple incision of the skin will suffice; and the author has met with others in which the excavated skin occupied several inches in extent, conveying the impression that it must perish, and yet the lead application has preserved it and led to its solidification.

In this way, in now more than 100 cases of indolent or acute buboes, whether arising from infection or from mere catarrh, the author has succeeded in preventing suppuration and in obtaining, very often without any puncture, absorption of their contents in the course of from six to ten weeks. Gangrenous glandular tumours are now of the rarest occurrence in the hospital, if they have not been admitted when already in that state. Just as rare now are those deep ill-conditioned sores, burrowing under fasciæ and sheaths of vessels, with all their dangerous consequences. The dressers and nurses now have to spend much less time over these cases. Professor Zeissl, therefore, is very anxious to make his mode of treatment more known—not that he believes he has made any discovery, for the same means have been employed by Wallace, Cooper, and others. One peculiarity he claims is that of not confining the treatment to mere indolent bubo, but of employing it also in the acute and subacute venereal bubo.

Art. 182.—*Treatment of Bubo.*

By W. H. McNamara, M.D., Assistant-Surgeon, 10th M.L.I.

(*Indian Medical Gazette*, August 1, 1871.)

The importance of this subject will be readily admitted by any surgeon who has had much experience in military practice.

Patients are seen in regimental hospitals lying on their backs for months with suppurating bubo. It is remarkable to what a state of ill health these men are reduced by confinement and slow suppuration.

When an acute bubo is opened in the usual way, by a free incision, granulations spring up very slowly, principally from the sides of the incision, and they are usually pale, flabby, and unhealthy: granulation from the bottom is slow, though all kinds of stimulating applications are applied. In a situation where the skin is so moveable as in the groin, the granulations of opposite sides of the wound never adhere; the consequence is that after prolonged and tedious treatment the wound is covered over by weak and unhealthy epidermis, resembling the false membrane of a sinus, leaving a sulcus which is liable to break out again when any prolonged exertion, such as a march, is performed. To remedy this state of affairs, Dr. McNamara has for some time practised the opening of bubo by means of potassa fusa.

The bubo is covered over with several layers of sticking-plaster, in which a hole, *half* the size of the intended opening, had been previously made; potassa fusa is now rubbed on the exposed skin, through the hole; sticking-plaster is then put over the hole, and a full dose of opium given. Very little irritation is produced, and the patient expresses his satisfaction that the knife has not been used. In a short

time a black *eschar* is formed, which is removed in a few days by poultices, and a healthy ulcer, easily healed by the usual treatment, is the result.

Chronic bubo, when opened by the knife, is even more troublesome than the acute disease, on account of the well-known thin blue skin which surrounds the opening and prevents healthy action. It is usually recommended to get rid of this by means of potassa fusa, or some other caustic, but if potassa fusa is used, as described above, in opening the bubo, this unhealthy skin does not appear.

In some cases of chronic, painless, indolent bubo, small suppurating centres occur without interfering much with the vitality of the skin which covers them. In these cases an apparatus, which lets out the matter without letting in the air, has been employed with very good effect.

As instruments are not always at hand, it occurred to the author that by running a lancet under the skin, commencing a few lines from the seat of suppuration into the abscess, squeezing out the matter, and applying a pad with a bandage, a similar result would ensue. Dr. McNamara has practised this method in several instances, with the effect of curing the patient in a few days.

Art. 183.—*Extraordinary Case of Hydrocele.*

By John G. Meachem, M.D.

(*New York Medical Journal*, April.)

Dr. Meachem relates an instance of a hydrocele which reached to within four inches of the knee-joint, and measured twenty-three inches in circumference. On its being tapped, five quarts of a very dark, almost black, serum (the hydrocele originated in a severe blow received fifteen years before) was discharged. Within three years paracentesis has been repeated six times, never less than three pints being discharged—the fluid being much lighter in colour on these latter occasions. The patient refused to consent to other than palliative treatment. Dr. Meachem reports this case on account of the very unusual size of the hydrocele, ranking among the largest on record.

Art. 184.—*Urethral Rheumatism.*

By Thomas Bond, F.R.C.S.

(*British Medical Journal*, November 25, 1871.)

At a meeting of the Medical Society of London, Mr. Thomas Bond read a paper on the so-called urethral rheumatism. This was not the effect of any specific poison or constitutional diathesis; and it often occurred independently of gonorrhœa, as well as of very gouty or rheumatic predisposition. It was dependent on a local condition of the urethra; and he called it urethral rheumatism as being the most convenient name.

It occurred in men of an anæmic or weakly condition, or when gonorrhœa had been treated too long by copaiba or purgatives. There was a subacute inflammation of the synovial membranes and of the fibrous tissues about the ankles, heels, and balls of the great toes; it gradually affected the shoulders, elbows, and hands. Congestion of the sclerotic was present, and the health suffered severely. Exacerbation took place, with pains in the loins in the morning, followed by profuse perspiration, with loss of appetite and of sleep. The urine was scanty, the tongue coated, the face hectic. The limbs often became permanently contracted, unless great skill and care were used in the treatment. The urethral discharge varied from profuse muco-purulent discharge to the slightest gleety fluid. The disease was not diathetic, but septæmic; in fact, a chronic pyæmia. He believed that the altered state of the blood was kept up by the daily absorption of the morbid materials from the urethra. As soon as the supply of the *materies morbi* from absorption was stopped, the blood gradually eliminated the poison and returned to its healthy state. The peculiar immunity of women was owing to the greater thickness and coarseness of the vaginal epithelium than that of the male urethra, and to their not being treated by specifics and antiphlogistics. If the disease were a rheumatic urethritis, and not a urethral rheumatism, why should not women be equally liable with men? Antiphlogistics, copaiba, and iodide of potassium did no good, but rather harm. The proper treatment was full diet, with steel and quinia wine, and porter, and lastly injection, until the discharge was completely cured. A very good injection was tannin and opium with water.

Art. 185.—*The Value of Circumcision as a Hygienic Measure.*

By M. J. Moses, M.D.

(*New York Medical Journal*, November, 1871.)

Dr. Moses speaks of circumcision as a hygienic and therapeutic measure, and is convinced that the Jews of the enlightened school are inaugurating a dangerous reform, in the desire to invade the hitherto inviolability of the Jewish law; and he would impress upon his professional brethren of other creeds the necessity of explaining to their Jewish patrons the value and safety of maintaining circumcision, if not as a religious duty, as a hygienic measure, the importance of which probably influenced its institution as a ceremonial law.

Dr. Moses remarks, that if the following plan is observed, all danger may be considered as provided against and need never occur, if the surgeon watch his case properly.

1st. The amount of tissue sacrificed should be only just enough to divide the muco-dermoid junction.

2nd. The reflected mucous membrane should be carefully adjusted to the cut edge of the dermoid fold.

3rd. The frænum should not be wounded or lacerated.

4th. The wound should be kept open until active bleeding ceases, and the effused lymph has glazed on the line of approximation.

5th. The dressing should be the ordinary cold-water dressing, made of very fine linen, lightly applied.

6th. The surgeon should visit his patient, and renew the dressing two hours after the operation.

7th. A careful and attentive nurse, duly warned as to any possible accident, should watch the dressing from minute to minute. The dressing of cold water should be exchanged for one of soft oiled linen the morning following the operation.

8th. As soon as the healing has well begun, all dressing should be discarded, and the parts bathed in tepid water after each voidance of urine.

9th. The operation should be done by a surgeon, and the condition of the child, as to his ability to undergo the ordeal, submitted to his direction.

To guard against hæmorrhage, even under these circumstances, a reliable styptic, tannin, Monsel's iron, pulv. matico, punk, cobweb, the so-called alum-iron, charpie, &c., should be left with those who are charged with the care of the child, with careful directions as to how, and under what circumstances it is to be applied.

Art. 186.—*On "Holt's Operation" for Stricture.*

By James Spence, F.R.S.E., Surgeon to the Queen in Scotland.

("Lectures on Surgery," parts iii. and iv.; Edinburgh, 1871.)

Mr. Spence writes:—

"I was at first prejudiced against this plan, owing to what I had seen of the effects produced by the forcible dilatation with the conical sound. In cases where that instrument had been used, I had noticed that an irritable and resilient state of the contraction was the almost invariable result. From some opportunities I had of examining strictures dilated by this method on the dead body, I found the mucous membrane at and on either side of the stricture fissured, and I considered this condition so similar to that of fissure of the rectum, that the intense irritability seemed to me referrible to this fissured condition of the mucous membrane. Hence the immediate dilatation by Mr. Holt's method seemed to me as likely to lead to the same disagreeable results; but after trying it in some cases, and having had an opportunity of examining a stricture which had been treated by this method I found there was a difference between its action and that of the conical bougie. I saw that by his plan the stricture was fairly ruptured, not only through the mucous membrane, but through the condensed sub-mucous tissue forming the contraction. Now we know all that is required to cure the excessive irritability of fissure of the anus, is division of the fissure fairly through its hard base; and whilst we usually effect that with the knife, still it can be effected by the coarser method of rupture with the fingers; so that

Holt's method by fairly rupturing the hardened basement texture of the contraction prevents or even cures the irritable condition of the stricture, and thus acts very differently from the partial fissuring of the mucous membrane caused by the conical bougie. For the last nine or ten years I have practised Holt's method, and with great success, so that I feel no hesitation in recommending it as at once efficacious and safe—that is, as free from danger as any operation on diseased urinary organs can be.

Art. 187.—*On the Treatment of Tubercle of the Testicle.**

By M. Chassaignac.

(*Gazette Hebdomadaire*, No. 48, 1871.)

"The object of this communication is to eliminate from the treatment of testicular suppuration such rigorous methods as castration and the employment of the actual cautery, by proving that better results may be obtained by milder means, and that the application of heroic remedies leads to lamentable practical consequences. The various suppurations which may give rise to fistulæ occupying the scrotal region, consist on the one hand in urinary abscesses, of which I intend to speak now; and, on the other do not, in—(1) tuberculous abscess of the testicle; (2) encysted testicular suppurations; (3) tuberculous abscesses of the epididymis; (4) diffused testicular suppurations; (5) non-tuberculous suppuration in the epididymis; (6) fistulæ, following suppurative inflammation of the tunica vaginalis; (7) purely scrotal fistulæ, resulting from phlegmon; and finally, gummatous tumours, giving rise to fistulæ, may form in the testicle and in the lower part of the scrotum. None of these affections demand excision of the testicle. In this matter there have been veritable surgical mishaps; healthy testicles have been removed in cases of simple abscess. The chief mischief does not arise from the ablation of a partially destroyed and useless organ, it has its origin chiefly in the section of the cord, with its hæmorrhages, its purulent diffusions either into the scrotum or into the inguinal regions. And when the cord itself is tuberculous, what can be done by excision? But it is asked, what is to be done when the ravages of the disease have become so severe as to indicate nothing short of excision? This shows precisely the utility of proceeding from the commencement by methods of canalization; a simple tube would have prevented all these disorders.

"Without disputing the cases of cure of tuberculous fistulæ by the actual cautery, there are reasons which lead me to oppose this kind of practice. The hot iron passed over the living tissues may be applied to points which we wish to spare, or may not touch parts which we wish to attack. The cicatrization which follows the application of the actual cautery gives rise to an inodular formation, particularly at the entrance of the fistula, in the surrounding integument, which closes the fistulous canal, and so leads to the formation of a

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* Communicated to the Société de Chirurgie, of Paris.

fresh abscess in the deep-seated parts. Finally, the cauterization is a burn, and I have noticed that burns of the scrotum expose the patient in many cases to the risks of erysipelas and angeioleucitis.

"I will represent in a single and very short case, the usual results of my practice in regard to the above affections. A man aged twenty-seven years was admitted into the Lariboisière on May 30, 1863. For nineteen years there had been a gradual increase in the size of the scrotum on the left side. This he attributed to a fall from a tree. About a year before admission he was treated in Algeria, but without success. On June 17th the cul-de-sac of a fistulous canal was opened, and a tube passed through. This was followed by slight inflammatory symptoms: the suppuration was slightly increased, and then disappeared altogether. The cessation of the discharge was permanent, and the cure perfectly verified by consultation.

"Curling has reported two examples of castration performed in cases of suppuration in the epididymis, for the treatment of which at the present day the most extravagant partisans of castration would have hesitated to resort to this mutilation. Drainage by elastic fenestrated tubes has led in like cases to the most satisfactory results. I have many opportunities of making out the permanence of the cure.

"In certain cases pus is imprisoned in the testicle; the organ is swollen and painful. For this, amputation has been admitted as the only remedy. Sir Astley Cooper, in examining a testicle which he had removed, found in its centre a chronic abscess. M. Nélaton and M. Denonvilliers have each reported an analogous case. M. Gosselin, in a case of the kind, made a simple incision, which was not followed by a fungus. A patient treated by myself in La Charité, in 1847, with a simple incision, also recovered without a fungoid growth.

"The epididymis is much more frequently than the testicle the seat of suppurations, which are generally chronic. It is especially in the form of softened tubercle that this suppuration of the epididymis presents itself. There exist two distinct kinds of suppurative epididymitis—canalicular epididymitis and cellular epididymitis. The first is very rare, and I have seen but one example. The other is much more frequent. When the suppuration is canalicular, neither the actual cautery nor excision will avail. The former cannot penetrate into the deferent canal, and the knife will remove but a portion of the disease. If abscesses exist in the cellular tissue, the affection is too slight to justify the ultimate resources of surgery. Sometimes, when the epididymis has been the seat of prolonged suppuration, the integument of the scrotum is undermined, and the pus reaches as far as the groin, where may be observed symptoms of adenitis. Drainage ultimately restores the structures to their normal condition.

"The most interesting side of the question relates to the errors of diagnosis. Tuberculous abscess of the epididymis, and especially tuberculous fistula, resemble a fistula of the epididymis which is not tuberculous; there is a differential sign, but it does not exist always. This is irregular induration of the cord in cases of tuberculous fistula of the epididymis. In one patient, who was thought to be the subject of tuberculous fistula of the epididymis, and to whom a celebrated surgeon proposed castration, cure was effected in seven weeks by the use of a

drainage tube. Bad symptoms sometimes follow the puncture of a hydrocele, the point of the trocar having probably wounded the epididymis.

"From the preceding remarks, it remains established that the testicle ought not to be removed for an abscess, and above all for an encysted abscess. Whenever, by the long standing of the disease, fatigue, pain, and exhaustion, it is necessary to consider the question of castration for the treatment of testicular enlargement, the surgeon ought, before undertaking this operation, to make an exploratory puncture, and then if the instrument gives exit to pus, to make a simple incision. If incision alone is insufficient, he should then resort to drainage, and never proceed to testicular mutilation for purely suppurative affections, however complicated they may at first sight have appeared to be."

Art. 188.—*On the Treatment of Hæmorrhoids by Fuming Nitric Acid.*

By Professor Billroth.

(*Wiener Medicinische Wochenschrift*, xxi. 35, 1871; *Schmidt's Jahrbücher*, No. 1, 1872.)

Mr. Curling, in his "Observations on the Diseases of the Rectum," recommends for the treatment of the so-called internal hæmorrhoids, to which the Germans give the name of hæmorrhoidal prolapse, the method carried into practice by Dr. Houston, of Dublin.

Prof. Billroth has operated with good results in twenty-six cases of hæmorrhoidal tumours. Of these four were treated according to Langenbeck's plan by the actual cautery, ten by the galvano-caustic noose, and twelve by fuming nitric acid. All the cases ended in cure. Prof. Billroth has never practised deligation and excision; the use of the écraseur on account of the subsequent bleeding and stricture is now quite abandoned. The galvano-caustic method frequently causes constriction, which, however, disappears in the course of from three to five months. Such a result has not been observed after the application of the actual cautery, as the action of this agent upon the surrounding healthy tissues does not extend so deeply as is generally supposed. The action of the actual cautery may be obtained by a method simpler and not such a cause of terror and agitation to the patient. Prof. Billroth had previously used nitric acid in many cases of telanguetasis. After touching a red patch of this kind until it becomes of a grey colour, a brown eschar is formed, which is detached in the course of ten or fourteen days, healing subsequently taking place with the formation of a soft smooth cicatrix. This method is suited only for quite flat angiomata and for these is much to be recommended.

During the last two years Prof. Billroth has treated in the following manner patients suffering from prolapsed hæmorrhoids:—On the previous morning a dose of castor-oil is administered, and on the morning of the operation a clyster. After the return of the latter, which causes protrusion of the piles, the patient is placed in bed with the knees and hips well flexed; the skin around having been thickly smeared with fat,

he then applies a piece of stick dipped in freshly prepared fuming nitric acid to the whole of the projecting mucous membrane until it has become stiff and of a yellowish-grey colour. The manipulation is seldom so painful as to demand narcosis. Dragging down the piles by means of sharp double hooks is if possible to be avoided, since this always gives rise to hæmorrhage. Cauterization of the fold intervening between the skin and mucous membrane causes unnecessary pain. When the cauterization is completed, the protruded portion is smeared with oil and then returned. If the prolapse should again take place, which it may do, and the progress of the case be still satisfactory, lead lotion is to be applied. If pain continues after the reposition of the hæmorrhoids, which is rarely the case, a morphia suppository will give relief. For a few days after the operation the patient takes simple diet. Febrile disturbance seldom occurs. Retention of urine frequently comes on after this as after other operations on the rectum; then warm baths and fomentations are to be ordered; if these should not succeed a catheter must be passed with *very particular care*, as the retention depends upon spasm of the vesical sphincter. In the worst cases it is necessary to administer chloroform before a catheter can be passed. For some days after the operation there generally is constipation. If four days have passed without a stool, Prof. Billroth administers a small dose of castor-oil. The first motion is very painful, after the second or third the pain does not return; the bowel does not come down again, and in some cases the patient has not been kept to the house for more than six or eight days. None of Prof. Billroth's patients were kept to the house longer than fourteen days.

Sometimes the separation of the eschars is attended with pain and hæmorrhage. In no case was it necessary to repeat the cauterization. In no patients who had been operated upon twelve months previously was any stricture or impairment of the rectum found.

Art. 189. — *On Strangulated Hernia.*

By Sir James Paget, Bart., V.P.R.S.

(*British Medical Journal*, April 27.)

In speaking of the condition of the patient as affecting the risk of the operation by reason of age and general health and various complications, Sir James says that among his cases he finds not only many of the fattest and feeblest, but examples of complication with phthisis, acute and chronic bronchitis, aortic constriction, phlebitis, gastric ulcer, diseased bladder, intestinal disorders of various kinds, and internal strangulation. Patients such as these were, one would not wound for any trivial good; but with a strangulated hernia, the peril of doing the operation can hardly ever be so great as the peril of leaving it undone. Old age and feebleness, fatness, intemperance, or unsoundness of whatever kind, may add to the risks of this, as of any other operation; but all these risks must be accepted. A patient must not be allowed to die with a strangulated hernia, if by any means whatever the strangulation can be relieved; and we must not be averted from the operation by any

consideration of the number of deaths that follow it. The deaths after the operation may be fifty per cent.; but the deaths due to the operation are not more than two or three per cent., and even these would probably have been deaths from the hernia if the operation had not been performed. The great proportion of deaths is made up of those in whom the strangulation has done mischief which the operation cannot remedy. It is not unfair to maintain that, speaking generally, the deaths after operations for hernia are only to be counted as failures to save life, while the recoveries are to be counted as lives saved from certainly impending death.

Art. 190.—*On Strangulated Hernia.*

By James Spence, F.R.S.E., Surgeon to the Queen in Scotland.

("Lectures on Surgery," parts iii. and iv.; Edinburgh, 1871.)

In speaking of strangulated hernia, Mr. Spence says:—

"Several years since, I looked over the results of 127 cases of hernia in which I had operated, and in these there were twenty-six deaths; in seventeen out of the fatal cases the gut was distinctly gangrenous, and therefore, though the operation was the only chance of saving the patient's life, the state of the intestine was such that a favourable result could hardly be expected. In seven cases peritonitis had commenced before the operation; and of these four were cases of congenital hernia, where peritonitis occurs rapidly. In one case pyæmia proved fatal on the eighth day, but this case was a very complicated one. In one recent case a fatal result occurred; here the operation was extra-peritoneal, and the hernia was very large and bulky, and had come down rather rapidly while the patient was at work. The man made violent efforts at the time to reduce the hernia, while afterwards attempts were also made, but without success. In this case the hernia had only been down for twelve hours. When I operated I divided the integument and the fascia down to the deep ring, and then by dividing the textures external to the neck of the sac, I was able to reduce the hernia with ease. After a time the patient began to pass bloody stools, showing that hæmorrhage from the interior of the gut had taken place, evidently in consequence of the efforts the man had made to reduce the hernia at first. I believe that if cold had been applied to the tumour, and the taxis properly employed at first, the hernia might have been reduced without any operation. The real cause of the fatal result was evidently the mischief produced by the violent and ill-directed efforts made by the patient to reduce the hernia when it came down."

Art. 191.—*Two Cases of Uterine Polypi.*

Under the care of Mr. Hulke, at the Middlesex Hospital.

(*Medical Times and Gazette*, Dec. 16, 1871.)

Hæmorrhage is usually an early as well as a leading symptom of uterine polypi. The interest of the following case lies in the complete absence of bleeding until the polypus protruded through the vulva, its appearance externally being the first indication to the patient of the existence of the growth.

Case 1.—A tall thin blonde, aged thirty-two, a cook, was admitted into Regent Ward on May 14th, for the protrusion of an unnatural substance through the os uteri, followed by bleeding. She related that a fortnight previously she felt some discomfort, and found, on going to the closet, a roundish body, of the thickness and length of the first two joints of her little finger, protruding from her person. Profuse bleeding soon followed. A doctor who was called to see her applied tannic acid, which checked it, and the protruding body disappeared. On an examination, the os uteri was found slightly dilated, and floating in the vagina was a long, roundish, soft polypus, not very unlike an overgrown uvula, which appeared to be attached just within the os, to its posterior lip. It was pulled down with a loop of thread, and cut off with an écraseur. No bleeding occurred, and in a few days she was discharged convalescent. A small scar marked the point of attachment.

It is commonly taught that the removal of a fibrous polypus from the uterus is never followed by recurrence, any portion of the stalk which may be left, withering and finally disappearing. The general truth of this is confirmed by experience; but there are exceptions, and, in the following case, had the patient survived long enough after the removal of the first polypus, a second and even a third might have been evolved out of the original stalk.

Case 2.—A servant, aged thirty-nine, was admitted May 30th, 1870, in a state of great prostration, into the cancer wards, having that morning had such profuse hæmorrhage from the womb that her medical attendant had only restrained it by using a strong styptic injection of a salt of iron. He had looked upon the disease as cancer, and had advised her removal into the hospital. During ten months she had suffered frequent and great losses of blood, unaccompanied, however, by any other vaginal discharge or by pain.

On a digital examination, the vagina was found filled with a tough clot overlying a tumour, the nature and connexion of which could not be clearly made out without detaching the clot, and it was feared this might provoke a fresh hæmorrhage, which in the exhausted state of the patient would very likely be fatal.

Four days afterwards the bleeding recurred, and at a consultation with Dr. Davis and Mr. De Morgan the tumour being found to be a polypus of the size of a large pear, was at once removed with the écraseur as the best means of arresting the bleeding and saving the woman's life. The removal of the polypus was bloodless, and the bleeding did not again recur, but the patient sank, and died a week

later. At the post-mortem examination the stalk of the polypus was found to be attached near the fundus of the uterus, and to contain three small fibromata of the size of peas, each of which might in succession have grown to a large polypus.

ART. 192.—*Two Cases of Recto-Vesical Fistula, successfully treated by Colotomy.*

By THOMAS BRYANT, F.R.C.S.

(*The Lancet*, March 16.)

At a meeting of the Clinical Society of London on February 23rd, Mr. Thomas Byrant read a paper on two cases of recto-vesical fistula successfully treated by colotomy. The first was that of a gentleman, aged sixty-four, who had had diarrhœa, tenesmus, and the passage of blood and mucus three months before he had begun to pass fæces in his urine. Colotomy was performed on August 16th, 1869, with complete relief. The patient was up and out of the house in a month. At the present time he passes his urine naturally, and the motions through the loin, some little urine at times finding its way into the rectum and upwards through the loin. The ulcer in the bowel has long healed, the fistula alone remaining. The second case was that of a gentleman, aged forty-nine, who for three years had been passing urine and fæces by the urethra. He was much reduced in health, and most miserable from the local pain and irritation caused by his disease. On the 5th July, 1870, colotomy was performed, complete relief resulting almost immediately. In three weeks he was up, and in another week out. Six months later he reported that he was getting quite fat, that he was free from all pain, and that his only trouble was the passage of water at times up the bowel through the artificial anus. At the present time, a year and a half after the operation, he remains well. In both these cases Mr. Bryant remarked that there was good reason to believe that the ulcerative action that had caused the fistula was of a simple nature, and had commenced in the rectum; that after the operation the ulcers soon healed, although the fistulous opening remained. He stated that the two cases in every way supported the remarks appended to a similar case which he had read at a sister society, and which were published in the *British and Foreign Quarterly Journal*, 1869, and still more prove the truth of Mr. Holmes's remarks on the same subject recorded in the *Med.-Chir. Transactions*, 1869-70. Mr. Bryant added that these cases, and all others he has had since 1868, have made him think more highly of the oblique incision in the operation than the transverse.

Art. 193.—*Flap Operation for Vesico-Vaginal Fistula.**

By E. D. Mapother, Surgeon to St. Vincent's Hospital, late Examiner in Surgery, Queen's University.

(*Medical Press and Circular*, April 10.)

Some months ago, Dr. Kidd, while consulting about a vesico-vaginal fistula, suggested to the author a mode of operation so ingenious and effective that he determined to adopt it when he met a suitable case. On the 10th of February, Dr. Kelly, of Ballinrobe, sent Dr. Mapother, for operation at St. Vincent's Hospital, a young woman in whom a vesico-vaginal fistula had formed four months previously, the patient having been forty-eight hours in labour. The distressing features of the disease, such as the soaking of all clothes with urine, and the excoriation of the thighs and nates, were fully developed, and round the anus sebaceous outgrowths had sprung out to a great size, and had been encrusted with phosphates and fœtid matter. The anterior wall of the vagina when exposed by the aid of the duckbill speculum, was found to be perforated by a round hole about one-quarter inch in diameter. The excoriations having been healed, and the sebaceous outgrowths repressed by the use of carbolated oil, and the bladder and urethra having been accustomed to the wearing of a catheter, Dr. Mapother operated after the following manner, his colleagues and Drs. Kidd and Roe assisting him

A U-shaped cut was made with an ordinary scalpel round the fistula through half the thickness of the vesical wall of the vagina, and the flap thus marked out was easily dissected upwards with the scalpel and forceps. The wall of the bladder now bulged back, and urine flowed freely through the corresponding half of the fistula. The vaginal flap being pared off by scissors put above the fistula in a semicircular way, the remainder of the flap easily came down to the lower edge of the raw space, owing to the elasticity of the vaginal wall; it was then secured by four iron-wire sutures put in by the tubular needle and twisted by the finger. The catheter was kept in six days, and not a drop of urine came away except through it. That with wings at the eye is convenient, but a No. 6 male catheter opening into a soda water bottle is very suitable. It was then left out, and the woman micturated voluntarily every two hours. Next day, finding the fistula completely cured, the sutures were cut and removed. Sixteen days after the operation, as the patient was micturating quite naturally, she left hospital.

The operation, Dr. Mapother states, is admirably suited for small fistulæ, that is, up to one-third inch in diameter, and they are the cases most difficult to cure by any freshening, paring, or splitting of the edges. The flap from the vaginal surface of the septum when drawn down over the hole in the vesical surface offers an effectual barrier to the passage of the urine.

There was but one exception to Dr. Mapother's description. He

* Read before the Surgical Society of Ireland, March 15th.

thought when they drew the flap down over the opening, that the thin inner surface was folded upon itself. The flap was composed of the vesical portion of the septum, leaving the coat of the bladder, and when they drew down the flap upon the fistula the inner portion became doubled upon itself, and thus they had not only the flap over the opening, but two broad raw surfaces brought in contact and held together without any suture. There was, therefore, a complete barrier against any escape of urine.

Dr. Roe said that the plan suggested by Dr. Kidd, and which he had tried successfully on the patient sent to him by Mr. Porter, was only applicable to small fistulas, and would not succeed in large ones. The splitting operation which was suggested by the late Mr. Maurice Collis, was found to be most successful in large cases, and he did not think this could ever be substituted for it, as Dr. Mapother appeared to think.

Dr. Cronyn considered they were much indebted to Dr. Kidd for the introduction of an operation which had proved most successful. He unfortunately had the opportunity of seeing a great number of fistulas, and a great number of operations, and his experience had been that the vast majority of them proved unsuccessful. Therefore it was that the Society and the Profession were much indebted to Dr. Kidd for a modification of an operation that had been hitherto so unfortunate. He did not know whether the observations he was about to make were altogether in place in a Surgical Society—they would, perhaps, be more appropriately addressed to the members of an Obstetrical Society; but he wished to say that the practical lesson to be derived from these cases of fistula was that the second stage of labour ought to be shortened, and the occurrence of these fistulas prevented. Scarcely any of the cases he had heard of had occurred in the city of Dublin. They had invariably come from remote districts of the country, and the history of the cases showed that in each instance the women had been allowed to remain in labour, two, three, or four days when this accident occurred. Every effort, therefore, of the obstetrician should be directed to shorten the second stage of labour.

Dr. Mapother had not the slightest doubt, for he had made a very diligent search through all the authorities on the subject, that Dr. Kidd was the originator of this operation; but in this as in other instances of surgical and in all mechanical devices, they must turn to the works of the Creator for the first exemplification of the principle. This was the exact method of closing the foramen ovale in the fœtus, and the flap which grew upwards and adhered to the left side of the opening, opposed an effectual barrier to the blood from either auricle. He saw in Dieffenbach's work, a great many operations described of taking flaps from the posterior surface of the vagina, and drawing them forward on the fistula; but these operations were completely given up, and to the other methods of closing a small fistula it was unnecessary to allude. He might just mention that he had seen Dr. Kidd operate in a case of vesico-vaginal fistula, where there was no vaginal wall of the bladder at all. He divided the os uteri, pulled down the posterior lip of the cervix uteri, and attached it round the edge of the vast fistula previously freshened. Of course the woman, who was within the period of

menstruation, was obliged afterwards to menstruate by the bladder, and he understood that in a similar case, not only did a woman freely menstruate in that way, but she actually conceived. The spermatozoa entered the uterus by the bladder, and she became pregnant. Every day he (Dr. Mapother) taught, as a lecturer on physiology, that spermatozoa immediately lost their life on coming in contact with urine; but it must be supposed, that in this particular instance, when they found their way into the bladder, this organ happened to be completely empty of urine. Dr. Roe misunderstood him, in supposing that he thought this operation would suit large fistulas, but he certainly thought any fistula one-third of an inch in diameter, might be cured by this most ingenious operation suggested by his friend Dr. Kidd.

Dr. Kidd observed that the case mentioned by Dr. Mapother was one recorded by Mr. Lane, of London. He turned the os into the bladder, and the woman remained perfectly water-tight after the operation. She went home, and after several months returned to St. Mary's Hospital with a marked uterine tumour. The idea of pregnancy never occurred to any of them. She stated that she had menstruated through the bladder for some time, and then ceased to do so, and the idea entertained was, that the uterus was full of retained menses. On that supposition, a trocar was passed into the tumour, and a considerable escape of fluid occurred, and some hours afterwards a fœtus was expelled through the opening which was thus made.

Dr. Cronyn said that on one occasion, a woman arrived at the Rotundo Hospital, evidently with labour pains. The vagina was found to be completely occluded. There was no os, and no mode of arriving at a diagnosis of her condition except from the tumour pressing on the vagina. A full consultation was held on the case, and Dr. Denham dissected down to the occluded structure and came upon the os uteri, which was then dilated, and the woman was delivered of a healthy child. The explanation was that, after her first labour, a prolonged sloughing process was kept up in the vagina and the husband had connexion with her in that condition. Subsequently the sloughing was cured and the vagina became occluded.

Art. 194.—*Catarrh of the Bladder in Man.**

By Dr. Kraus, of Vienna.

(*Medical Press and Circular*, May 29.)

"Effervescing wines, we stated, have a very injurious effect in urinary diseases, and that does not appear to depend upon the carbonic acid, but upon its combinations with mineral substances contained in the wine, since those suffering from vesical and renal maladies bear very well water charged with carbonic acid, which exerts a beneficial influence in assisting the expulsion of phosphates from the kidneys and

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* Translated for the Medical Press from *Le Mouvement Médical*, by F. M. Luther, M.D.

bladder. Carbonic acid, seemingly, is never found in a free state in the bladder; you never see the urine froth or become covered with bubbles, save after contact with atmospheric air.

"Champagne not only augments the secretions, but likewise increases the quantity of phosphates in an extraordinary manner, and the conduct of some physicians who prescribe champagne to those suffering from gravel or stone is quite unjustifiable, and irrational The acicular crystals of the triple phosphates multiply visibly in the urine, and cause severe pain, becoming embedded in the tissues along the course of the urinary passages, more especially at the neck of the bladder. One starts with the idea, that carbonic acid may perhaps exert a certain dissolving action upon concretions already formed; my experience absolutely contradicts this opinion. Carbonic acid acts in provoking a slight exaltation of the tonicity of the contractile elements of the urinary apparatus necessary for the expulsion of foreign bodies. This excitation is perhaps derived from the organic nervous centres. Carbonic acid contributes nothing to the dissolution of the organic or inorganic constituents of the urine.

"We know that wine is often submitted to the action of sulphur with a view to preserve it. When this operation reveals itself to the taste, that is to say, when the wine contains a great quantity of sulphur, it is injurious, and the chief result is a strong alkaline reaction of the urine. This malign influence upon the urinary passages, and upon the reaction of the urine is shared by all sulphurous waters, and patients suffering from bladder affections are invariably worse after the use of sulphurous baths, as well as after the exhibition of mineral sulphurous waters.

"The same phenomena which are observable after the use of wines rich in tannin, reproduce themselves when one drinks wines impregnated with lead; strangury and hæmaturia are the constant result of imbibing them, and if one should seek by administering metallic astringents to check those hæmorrhages of the uropoïetic system, quite a different result would be arrived at. A great deal of the hæmorrhages of the urethra which follow upon injections with acetate of lead, ought to be set down to the account of this astringent, of which mucous membranes affected with chronic catarrh are particularly intolerant.

"We now arrive at the beverage in most common use, to wit, beer, and its action in diseases of the urinary passages. We ought to be cautious how we use it, seeing that it cannot always be procured of irreproachable quality, and that the least alteration in its composition produces injurious results. Old beer causes no inconvenience, but the mucous membrane of the urinary passages becomes exquisitely sensitive in presence of new, bad, or sour beer. Ferments are the most deleterious element of bad beer; they penetrate the epithelium of the urinary mucous membranes, and not only occasion pains in the loins, renal colics, but even affect injuriously the mucous tissues, which in chronic catarrh do not need that to undergo different alteration of texture.

"If one examines the urine evacuated by a patient suffering from vesical catarrh immediately after the exhibition of new beer, nothing else is observed than a pronounced alkalescence. If this urine is left for six or eight hours in a warm place, and then examined under the

microscope, it will at first sight be thought to be the urine of a diabetic patient; in a drop of it will be seen swimming about little globules which are ferment cells, sporidia of a particular species of confervæ, like those which develop with extreme rapidity in saccharine liquids which commence to ferment. But diabetic urine is distinguished by this characteristic, that, after resting for twenty-four hours, there is formed upon its surface a pellicle, which examined under the microscope is seen to be composed of ovoid corpuscles and little tubes, articulated, simple or branched; these are the buds of a minute alga, the torula cerivisiæ. In the urine which is examined after the ingestion of new beer, the ferments do not attain this development; probably the urine must contain more sugar, and retain it longer for this degree of fermentation to be produced.

"Bière anglaise, pale ale, possesses this same noxious quality. Its richness in alcohol, and the quantity of carbonic acid which characterize it are the cause; porter, on the contrary, is very well borne. It is clear that quality and age are to be regarded, and as we rarely draw it from the best sources, I cannot counsel its use. I only want to show that it is innocuous, and to justify the English physicians who allow it in vesical diseases.

"Patients suffering from the bladder, even when they have been accustomed to beer for many years, must still give it up completely, and replace it by wine, when the catarrh is obstinate and of years' standing. By so doing, a decided modification will be obtained in the whole ensemble of the disease, and especially the disappearance of alkaleseence from the urine. One should never absolutely deprive of alcoholic drinks persons who make daily use of one or other of them, because it would weaken them and diminish the necessary energy of the muscles, of which we have already frequently spoken.

"I wish particularly to point out that, in young people, in those cases where the catarrh passes from the acute to the chronic stage, where a depression of muscular energy need not be dreaded, distilled water is the best drink, and even in very old catarrh, where we said wine was useful, the imbibition of a large quantity of distilled water is indispensable to the obtaining of a cure. Baths* should also be repeated every day till all sediments and alkaline reaction shall have disappeared from the urine. Then only may we talk of a complete cure of vesical catarrh. There remains only for us to speak of the value of some mineral waters so frequently prescribed in diseases of the bladder and kidneys. Upon this subject, let us remark that we have been accustomed to treat maladies of the urinary passages summarily, and that the practice of the most esteemed clinical students has presented the most manifest contradictions.

"We think that we have clearly characterized each form of catarrh in each of the organs of the urinary system; to each of them corresponds a special therapeutic and dietetic regimen. In sending then a patient to Carlsbad, or prescribing the waters of Preblau or Vichy, simply because he was supposed to labour under disease of the bladder or kidney, as is so often done, ignorance is betrayed of the chemistry of those ma-

* Turkish baths.

ladies, which plays a very important part in them, and should be very much taken into account.

"Carlsbad and its waters are positively dangerous in all cases where the catarrh is complicated by phosphatic sediments; these are certainly augmented by the use of this spa, and calculi soon form. It is inexcusable to allow a patient to sojourn at Carlsbad in the acute or subacute period of vesical catarrh. Professor Haller, director of the pathologic-chemical institute of the hospital, had combated energetically but vainly this line of treatment, because his analysis of the urine of persons sent to Carlsbad with chronic catarrh of all kinds and phosphatic sediments, showed him on their return from the spa an augmentation of sediments in the urine.

"What action can the alkalies with which the waters of Carlsbad are saturated, have upon the kidneys or bladder? What reasonable motive can there be for introducing those salts into an organism already overcharged with them?

"The waters of Preblau only act in chronic catarrhs without triple phosphate, and their action is not of long duration; the prolongation of their use does not exert any beneficial influence in chronic catarrh. I may say the same of Vichy. As long as the carbonic acid, which predominates as we know in the water of Preblau, continues to act, we remark a greater evacuation of sediments, and the urine becomes acid. But after the first week this phenomenon disappears, and the alkalinity of the urine reappears in an intensified degree, which is equivalent to an aggravation of the malady. Even when patients think that they are seemingly better because the vivifying influence of the carbonic acid makes them feel more comfortable, it is only an artificial state which disappears as soon as the organism gets accustomed to its stimulus.

"When the mucous membranes of the urinary passages are altered in their tissues by catarrhs, which have lasted for years, when their epithelium peels away in flakes, tonics are indicated, and experience has taught me that in all the pharmaceutical arsenal one can expect success from steel alone. Carbonate of iron is in such case a remedy that cannot be too much employed, and I have given as much as twenty grains a day without altering in anything the prognosis that I have indicated above. The use of wine, the ingestion of distilled water, and a nutritious diet, agree very well with this drug, as also baths—baths of many hours' duration are quite compatible with the use of iron.

"When one commences to take carbonate of iron, the stools become more abundant; but this symptom lasts at farthest for eight days, and things resume their normal course. The black discoloration of the stools is a sign that the steel fulfils its office, and what is superfluous is expelled by the abdominal passages. It is remarkable, that in cases where steel is not tolerated, the stools do not become black; dyspeptic symptoms then supervene, heartburn and nausea, and the steel has in consequence to be renounced.

"I do not know if it is to the iron or to the common action of baths that one should attribute the positive amelioration that chalybeate baths procure in chronic catarrh, especially those of very old date.

"The ingestion of chalybeates is also very advantageous, so that patients suffering from chronic catarrh with destruction of the mu-

cous membrane, may employ chalybeate baths as a principal means of cure.

"I have had occasion to observe recently three remarkable instances of cure by chalybeate spas. The first is that of a Servian physician, who for nine years suffered from the most terrible symptoms of this malady, and who by my advice employed no other treatment save baths, systematic ingestion of water, and a very nourishing regimen.

"I have already pronounced, when speaking of wines, against the use of sulphur in diseases of the urinary passages, and I allude to it here, because the French physicians, Roger in particular, prescribe sulphurous waters, besides Vichy inside and out. I have strongly condemned this treatment; now, whoever will examine a catarrhal urine after the use of those waters, will verify that its alkalinity is augmented, or in other words, that the disease is aggravated. It is just the same as I have already said, with the detestable English method of treating those diseases with lime water, which appears to me unsuitable, however little acquainted one may be with the chemistry of catarrh.

"It cannot be denied that vesical catarrh, being very often combined with catarrh of the stomach, the hyper-acidity of the gastric juice is a little diminished by the lime and sulphur, and the patients feel themselves visibly better. But experience teaches that the urinary mucous membrane does not participate in this improvement, that the quantity of phosphate of lime in the urinary passages becomes enormous, so that the malady is aggravated.

"The cure of urinary catarrh is essentially favoured by securing as much as possible the kidneys from all external influences, which modern garments do not render easy. Flannel girdles are very inconvenient; bandages, however well applied they may be, over the loins become insupportable, and for years I have given to all patients that I have had to treat for diseases of the kidney and bladder, the advice to give to this means of protection the form of a lengthening of the waistband of the pantaloons covering the loins.

"This means of protection is excellent; there is nothing peculiar in it; just the trouser reaches the end of the waistcoat, and persons who are accustomed to it, cannot sufficiently extol the beneficent action of this simple method, especially those who have tried bandages of all sorts. For we know that the most ancient authors have with reason attached great importance to having the kidneys kept warm when they are diseased.

"I await with confidence the confirmation of all that I advanced upon diseases of the bladder by physicians who will make the trial, and I am convinced that by this method, the study of this disease, which occupies but three or four pages in the best known books of therapeutics, will make rapid progress.

"Until now, the essential data of this malady were very confused, so I think I am justified in the publication of my researches, honestly pursued during eighteen years, which are everywhere attracting, I perceive with pleasure, the greatest attention from medical circles. I wish with all my heart, that all ardent students of our science may contribute to this progress as I am doing for years by my journal and my other works."

Art. 195.—*On the Surgical Treatment of Suppurating Ovarian Cysts, and on Pelvic Adhesions in Ovariotomy.**

By T. Holmes, F.R.C.S., Surgeon to St. George's Hospital.

(*The Lancet*, March 23.)

A case was related in which chronic suppuration occurred in an ovarian tumour, after paracentesis had been performed for the first time. Ovariotomy was postponed for some months on account of the patient's condition. When it was performed the cyst was found extensively adherent in other directions, and so tightly wedged into the pelvis that it was impossible to reach its pedicle. It contained about a gallon and a half of fluid, of which about half was pure pus. The remains of the emptied cyst were dragged out of the abdomen, a clamp was applied to its neck (at a distance above the pedicle which could not be accurately ascertained), and the wound was closed. The patient recovered, and after her recovery no sinus was left, nor was any tumour to be felt. The symptoms of acute and chronic suppuration in ovarian cysts were discussed, and it was attempted to be shown that if the general condition admits of it the suspicion of suppuration is a reason for performing the operation instead of delaying it. The case was also used to show that, in some instances, the results of ovariotomy may be perfectly favourable, though pelvic adhesions have prevented the complete delivery of the tumour. If the neck of the cyst admits of being embraced in a clamp, the lower portion of it may be obliterated during the healing of the wound. The superiority of this method, when feasible, to the other courses which may be pursued in dealing with pelvic adhesions, was shown.

Mr. Bryant remarked that the accurate diagnosis of a suppurating ovarian cyst was most important; that wasting, a hot skin, a permanently high temperature, bad appetite, local pain and tenderness on pressure, all indicated suppuration. If any doubt as to the diagnosis exists, he would be still more induced to interfere quickly, to remove the cyst if possible, or to take away as much as could be removed. He quoted a case to show the desirability of not leaving ligatures, and one also that showed the useful peculiarities of catgut.

Mr. Spencer Wells thought that with care the diagnosis between a suppurating cyst and peritonitis could be ascertained without great difficulty. An elevated temperature night and morning, with or without increase of pain or pressure, were two positive signs of the presence of a suppurating cyst. And if peritonitis exist operative procedure is still more decisively indicated. A very serious case under his care, in conjunction with Drs. Farre and Watson, in which peritonitis occurred from the bursting of the cyst into the abdominal cavity, ultimately did well. He considered it undesirable to separate adhesions before tapping the cyst, that as much should be removed as possible,

* Read at a Meeting of the Royal Medical and Chirurgical Society, March 12th.

and that it was a good plan to leave a drainage-tube in the wound after the operation, to give free exit to the suppurative discharges.

Mr. Holmes, in replying, doubted if the diagnostic signs spoken of by Mr. Wells were positive as well as negative, because in some cases high temperature exists without suppuration, and in some cases of peritonitis the temperature has been persistently high.

Art. 196.—*Report of a Case of Ovariotomy during Pregnancy.*

By Eugene Goddard, L.R.C.P., &c.

(*Medical Times and Gazette*, January 6.)

Dr. Eugene Goddard, at a late meeting of the Obstetrical Society, narrated the following case :—

The patient was twenty-nine years of age, and in 1870 was found to be the subject of an ovarian cyst, but as there were no urgent symptoms, the consideration of any surgical treatment was deferred. She then became pregnant, and about the end of the second month of utero-gestation, Mr. Spencer Wells removed the ovarian cyst. Eleven and a half pints of fluid were withdrawn. The clamp was removed, and the bowels acted on the eighth day. Pregnancy went on uninterruptedly, and a living child was born at the full period. Dr. Goddard said that the compound nature of the cyst precluded the idea of tapping, as also did the risk of peritonitis, suppuration of the cyst, and the formation of adhesions. Premature labour was not induced, because the patient was already beginning to suffer constitutional disturbance from the double burden, and it was doubtful whether, by the time a viable child could be born, they would have assumed such magnitude as to imperil the patient's safety; whereas, if abortion were induced, the child would be lost and the tumour would remain.

Dr. Ross related a case in which Mr. Wells had operated under more adverse circumstances, as the lady was much broken down in health at the time of the operation. A small ovarian tumour was diagnosed eighteen years ago. The patient subsequently got married, and Dr. Ross had attended her in four labours. In no instance was parturition attended with any serious difficulty. It was observed that during gestation the tumour appeared to become smaller. The tumour rapidly increased about a year ago, and Mr. Wells removed it successfully, the patient being about two months pregnant. Her labour is daily expected.

Mr. Spencer Wells said that the existence of the cyst for eighteen years, and the presence in its walls of hard, bone-like masses, had led to the diagnosis of a dermoid tumour. Mr. Wells had performed ovariotomy four times during pregnancy, and all the patients had recovered.

Art. 197.—*Cases of Abdominal Aneurism treated by Proximal and Distal Pressure.**

By Walter Moxon, M.D., and Arthur E. Durham., F.R.C.S.

(*Medical Times and Gazette*, April 20.)

A paper, by Dr. Walter Moxon, and Mr. Arthur E. Durham, was read, entitled, "On a Case of Abdominal Aneurism cured by Compression of the Aorta." The patient, a comparatively healthy-looking young man twenty-seven years of age, presented himself among Mr. Durham's out-patients at Guy's Hospital on August 2, 1871. On examination he was found to be suffering from an abdominal aneurism of considerable size, the pulsation and intumescence of which were manifest to the eye as well as to the touch. He was recommended for immediate admission, and was placed under the care of Dr. Moxon in the clinical ward. The aneurism could be distinctly felt over a space extending from rather less than an inch below the cartilages of the fixed false ribs above to a level with the umbillicus below, and from the right side of the median line across to about midway between the median line and the left border of the abdomen, or rather further. Pulsation was full and strong, but could be controlled by careful and deep digital pressure. The patient was kept perfectly at rest in bed for eleven days, and on very spare diet. At 10.30 A.M on August 14 (no food having been taken since the preceding evening) chloroform was administered, and Mr. Durham proceeded to compress the aorta on the proximal side of the aneurism by means of Lister's abdominal tourniquet. There was just room to get the pad of the tourniquet between the cartilages of the ribs and the aneurism. The tourniquet was screwed down very slowly, and carefully adjusted in position and direction until the pulsation of the aneurism, as well as that of both femoral arteries, was completely arrested. The lower extremities were enveloped in cotton wool, and flannel and hot-water bottles were placed in the bed. The compression was absolutely maintained for ten hours and a half, the patient being all the time kept under the influence of chloroform. At the end of that period his general condition, as indicated by pulse and respiration, was such as seemed to render it undesirable to continue the treatment. The tourniquet was accordingly removed, and no more chloroform was administered. No pulsation of the aneurism nor of the femorals could be detected. A bright-red patch marked the spot where the pad of the tourniquet had compressed the skin. The lower extremities were cold, and marked here and there by purplish or livid patches, but they were in more favourable condition than they had appeared to be at an earlier period during the compression. In the course of a short time pulsation of the aneurism could be again detected; but the aneurism remained much smaller and harder than before the treatment. The patient passed a good night, and the next day had little or nothing to complain of except the exquisite tenderness of the skin at the compressed spot. There

* Read at a Meeting of the Royal Medical and Chirurgical Society, April 9th.

was no internal pain or tenderness, nor any indication whatever of mischief done to the visceral or other internal structures. It seemed remarkable that such severe treatment should be followed by so marked an absence of all serious disturbance, whether local or constitutional. No bad symptom of any kind arose. The aneurism gradually became firmer and smaller, and its pulsation less and less perceptible. At the end of rather more than a month pulsation could no longer be detected. The femoral arteries, in which, as well as in the aneurism, pulsation had to some extent temporarily returned, had also ceased to pulsate; the aneurismal tumour gradually diminished in size; the patient recovered health and strength, and indeed was apparently in far better condition than he had been for a long time previously to his admission to the hospital. He was presented for examination by the Fellows present. In commenting upon this case, the authors remarked that, so far as they were aware, it was only the second case of the kind upon record in which a similar method of treatment had been followed by similarly successful results. The first case occurred in the practice of Dr. Murray, of Newcastle (to whom they wished to ascribe all the credit of having initiated the method of treating abdominal aneurisms they had thus adopted). It appeared probable that in their case, as in that of Dr. Murray, the aneurism was connected with the aorta at or about, and probably involving, the inferior mesenteric. In such cases this method was most applicable. In another case, however, now under their care at Guy's Hospital, there was reason to believe that the aneurism was upon the superior mesenteric. Nevertheless, they hoped to succeed in applying this method, and with satisfactory result. Sphygmographic tracings were taken by Mr. Mahomed during an experimental attempt made by Mr. Durham to compress the aorta in the case referred to. Mere tracings showed in a most striking manner the effect produced upon the pulse at the wrist by compression of the abdominal aorta or immediately connected parts. In conclusion, the authors expressed their opinion that the method described should be carefully, but fully, tried in all cases of abdominal aneurism (few though such cases be) in which it may be found practicable to compress the aorta on the proximal side of the aneurism in such way and to such extent as to arrest its pulsation, and at the same time without the exercise of such force as might seriously damage the viscera or other internal parts. On anatomical grounds compression of the aorta on the distal side of an aneurism would not appear to offer promise of much success.

Art. 198.—*A Case of Abdominal Aneurism Treated by Distal Pressure, with Remarks.**

By Thomas Bryant, F.R.C.S., Surgeon to Guy's Hospital.

(*The Lancet*, April 20.)

The patient was one of Dr. Pavy's, who asked Mr. Bryant to see the

* Read at a Meeting of the Royal Medical and Chirurgical Society, April 9th.

case with a view to treatment. It was a man aged thirty, with an abdominal aneurism in the epigastric region the size of a fist. Distal pressure was determined upon, as no other treatment was applicable. It was applied by means of a Lister's abdominal tourniquet, with the patient under chloroform. It was kept up for twelve hours, then removed for twelve hours, and reapplied for four hours; the treatment being given up as the man's powers seemed failing. He died eleven hours after the removal of the clamp. After death peritonitis was found to have been the cause of death, from the bruising of the bowel and peritoneum by the clamp. An aneurism of the cœliac axis was present, which was filled with a perfect clot, evidently of recent date, but ante mortem.

The post-mortem was made by Dr. Moxon, whose report was read.

In his remarks, Mr. Bryant pointed out how the danger of peritonitis seemed to be one that appertained to the application of pressure by an abdominal tourniquet under all circumstances, and was to be accepted as a danger which should always be considered. He dwelt upon the pathological fact, which the preparation and drawing from it taken from the patient illustrated, that a large abdominal aneurism may undergo mechanical closure by a clot from the application of distal pressure for twelve or sixteen hours. The case suggested the value of other forms of practice upon the distal side of an aneurism which are based upon the same principle, such as the temporary occlusion of an artery by ligature, acupressure-pins, or other means; for if, he remarked, pressure for a few hours upon the afferent or efferent artery of an aneurism—sufficient to arrest the flow of blood through its channel—is enough to bring about the mechanical closure of a sacculated aneurism by means of a clot, and consequently its cure, surely the application of other means which are calculated to fulfil the same purpose may be employed to effect the same end. He then alluded to Hunter s, Astley Cooper's, and Traver's temporary ligatures, and to Lister's carbolized catgut ligatures, which he regarded as temporary ligatures. He went on to show how contused arteries often became occluded ones, and that this was probably from some detachment of the inner coats. He suggested the adoption of some instrumental means by which these results were to be secured—by which the inner and middle coats of an artery might be divided and allowed to recurve without destruction of the external. He then alluded to the artery constrictor of Dr. F. Spiers, of New York, and showed the instrument, stating that his own experiment had gone to prove the truth of Dr. Spiers' statement. He believed that we had in this instrument an element of usefulness that wanted working out. He concluded by showing how successful the distal treatment of aneurism had been under certain circumstances, and expressed a belief that it was a form of practice well worthy of renewed attention in cases where all other forms of practice were inapplicable.

Art. 199.—*Report of a Case of Aneurism of the Arch of the Aorta treated by Ligature of the Left Common Carotid Artery.*

By John Cockle, M.D., and Christopher Heath, F.R.C.S.

(*Medical Times and Gazette,* May 10.)

At a meeting of the Clinical Society of London, on April 12, a paper by Dr. Cockle and Mr. Christopher Heath was read, "On a case of Aneurism of the Arch of the Aorta treated by Ligature of the Left Common Carotid Artery." The patient (who was brought before the Society) was a man, aged forty-eight, a farm labourer from Cambridgeshire, who came under Dr. Cockle's care in January, 1872. He had experienced pain in the right side of the head, neck, shoulder, and chest for four or five years, attributed to rheumatism. In April, 1871, he noticed a pulsating swelling in the hollow of his neck, and was in Addenbrooke's Hospital for two months without relief. After Christmas, 1871, he was compelled to give up work from the increasing pain in the shoulder and neck. He presented marked symptoms of aneurism of the ascending and transverse portions of the arch of the aorta. There was displacement of the right sterno-clavicular articulation, with projection of the right and upper portion of the sternum; and the episternal notch was filled by a pulsating swelling. There was a strongly heaving and expansile impulse over the whole of the swelling, and marked dulness on percussion existed over the whole area of the tumour. No bruit could be heard, but a double concussion-shock was felt. The respiratory murmur was feeble or absent over the upper portion of the right lung. The heart-sounds were dull and muffled, but without appreciable murmur. There was no cough or difficulty of deglutition. The left radial pulse was decidedly feebler than the right; and the left pupil was much dilated, and the left eye congested. On exertion, he complained of shortness of breath, palpitation, and pain. Mr. Heath tied the left carotid artery above the omo-hyoid on February 26, 1872. Carbolized catgut was used for the ligature, and the wound was covered with cotton-wool. No constitutional disturbance followed. Within forty-eight hours the patient could lie and sleep on his right side, which he had been unable to do before. The left pupil became natural, and the congestion of the eye disappeared. On the eighth day, when the dressings were removed for the first time, the wound was found completely healed by first intention. Since the operation the condition of the patient had in every way improved, the chest having become flatter, and the heaving impulse greatly diminished. The patient was free from all pain or inconvenience. He was brought before the Society before returning to the country, and the authors proposed to report upon his condition at a later period.

Art. 200.—*Lateral Lithotomy; Stone in the Cavity of an Abscess near the Prostate.*

Under the care of Mr. C. S. Jeaffreson, at the Hospital for Sick Children, Newcastle-upon Tyne.

(*British Medical Journal*, June 8.)

C. F., aged eighteen months, was brought to the hospital for phimosis and blennorrhagia of some weeks' standing. His mother stated that for some time he had suffered pain whilst passing urine. He was sounded, and a calculus was readily detected. When he was placed in the position for lateral lithotomy, it was observed that a firm deep swelling existed in the perineum, occupying principally the right side. This swelling was free from tenderness; the skin over it was in no way inflamed; and, although it was suspected it was an abscess, in many ways it did not resemble one. Dr. Hume readily introduced the ordinary grooved staff, and it came into contact with the calculus. On incising the perineum some pus escaped; and when the bladder was reached there was a considerable gush of urine. On introducing the finger into the bladder, the stone could not be detected there, although but a few moments before it had been in contact with the staff. Whilst feeling for it Mr. Jeaffreson detected that his finger had gone beyond it, and that it was lying just without the bladder and to the left side, only separated from the finger by a delicate membranous wall, which was evidently the sac of the abscess. With his finger-nail, he readily tore through the latter: and the calculus, which was no larger than an ordinary bean, was easily removed. The child made a good recovery.

Art. 201.—*Lithotomy after Lithotrity.*

By Walter Coulson, F.R.C.S.

(*The Medical Press and Circular*, April 8.)

At a meeting of the Medical Society of London, on March 25th, Mr. Walter Coulson read a paper on lithotomy and lithotrity. He commenced by observing that, instead of discussing the comparative merits of the two operations, it would be far more useful and grateful to examine how often and in what cases lithotomy might be called to the aid of lithotrity. The full benefit of lithotrity can be obtained when the operation is confined to certain limits and to certain classes of cases. But experience and success have rendered operators more enterprising. The field of operation has been gradually extended, and now embraces fully two-thirds of the cases of various calculi occurring in adults and susceptible of an operation. But this extension has not been made without entailing certain disadvantages. In proportion as the field of operation becomes extended, so the obstacle to the successful termination of the case increases. Unfavourable symptoms are liable to occur,

and serious accidents, unless promptly met, may terminate in death. The only prompt and effectual method of relief in the cases now alluded is that afforded by lithotomy. Mr. Coulson then proceeded to show from statistics that the danger of having recourse to lithotomy was not increased by its having been preceded by an unsuccessful attempt at lithotrity. Lithotomy after lithotrity was not more fatal than lithotomy preceded by lithotrity, the class of patient remaining the same. This was shown by the statistics of Mr. Coulson and of Sir Henry Thompson, which gave a death rate of 1 in $4\frac{3}{4}$ cases of primary lithotomy for patients beyond the age of fifty.

For patients of the same class, but in whom lithotomy succeeded lithotrity, the death rate was 1 in $4\frac{2}{3}$ cases. This conclusion is deduced by the author from cases of Civiale, Swalin, Velpeau, &c., to which are added six cases that occurred in his own practice. The conditions which may render it necessary to perform a second operation were next examined by the author.

The size and hardness of stone, either singly or combined, are, according to Mr. Coulson's experience, the most frequent causes of lithotomy after lithotrity. It is not difficult to perceive the connexion between cause and effect. Large and hard calculi must require an extra amount of instrumental work, and it is quite impossible to tell beforehand what the extent or effect of that work may be. This remark, as the author observed, applies peculiarly to hardness or rather to the resistance which the stone may offer to a crushing force. Cases of multiple calculi, he thinks, should be reserved for lithotomy; but if attempts be made to crush them, the effects of each sitting should be carefully watched, for irritability and contraction of the bladder may set in. Seizing and fixing the stone between the blades of the instrument is the most important part of the operation. The author dwelt at some length on this point, and examined in detail the various obstacles which the surgeon may encounter in this part of the operation. They are:—

1st.—Cysts of the bladder, exemplified by two cases from the author's practice.

2nd.—Shape of the stone—viz., when very flat. This shape presents an obstacle to the lithotomist also; but what he does is done more quickly, and there is less danger of reaction.

3rd.—Great irritability and contractility of bladder. Many old cases of stone are complicated by these unfavourable conditions, which place the case beyond the reasonable li its of lithotrity. The progress of such a case must be carefully watched, and recourse had to lithotomy if any dangerous symptoms make their appearance. Complete retention of urine may ensue during lithotrity, and arise from various causes. The author, however, dwelt chiefly on retention accompanied by tumefaction about the prostate or neck of the bladder, caused by the action of the lithotrite. Débris are apt to accumulate at the neck of the bladder, and the distressing symptoms are little, if at all, to be relieved by passing the catheter. The author thinks that lithotomy should be had recourse to in cases of this kind, and he stated the grounds on which his opinion is based. Finally, the author noticed a set of cases which he regarded as exceptional and not easily explained.

For instance, a case appears to be suitable in all respects for lithotrity, and goes on for some time favourably, when suddenly, and without any discoverable cause, an unfavourable condition sets in with rigors and irregular fever: irritability of bladder, &c. Here the author recommended that the operation should be suspended and lithotomy performed, if medical treatment should fail to give relief. The general rule which the author drew from his observation is, "That the operation of lithotrity, when commenced with a due regard to its indications, may be continued until the surgeon feels convinced that any further perseverance must endanger life; when this conviction has been arrived at, the author thinks that lithotomy should be performed without delay; but he insisted that the necessity imposed on the surgeon was, having arrived at a correct diagnosis of the nature and effect of the obstacles he has to encounter, he should weigh the latter against the patient's power of resistance, and if the former prevailed the scales should be turned by throwing in lithotomy."

(c) CONCERNING THE UPPER EXTREMITY.

Art. 202.—*Excision in Gunshot Fracture of the Humerus.*

By M. Ollier.

(*Medical Times and Gazette*, February 24.)

At a recent meeting of the Lyons Society of Medicine, M. Ollier read a memoir on "Excision of the Diaphysis of the Humerus after Fractures from Gunshot" This he had practised in three cases during the late campaign on the Loire, removing nine, seven, and six centimetres of the bone; and all the patients did well. In one of these the excision of six centimetres was performed on the upper third of the humerus, below the head, which firmly united with the rest of the bone, and the uses of the limb were completely re-established, the shortening which remained being only twenty-five millimetres.

The cases of gunshot wound of the humerus, M. Ollier observed, in which his operation is indicated are comparatively rare, and expectation should be the general rule. It is in comminuted fracture, with denudation of the periosteum and contusion of the medulla, and especially when the projectile remains amidst or in the vicinity of the fragments, that intervention should take place. At a later period inflammation and pain may also render excision necessary; for one of the immediate consequences of the operation is the disappearance of the pains, to the great relief of the patient. M. Ollier's mode of procedure is entirely different from the old one for the removal of fragments of bone; for, in spite of the comminution, a true sub-periosteal excision should be attempted. Each fragment is successively seized and separated from its periosteum, so that at last a tolerably complete periosteal sheath is obtained, in spite of its lacerations opposite the seat of fracture. The bone, in fact, being a very compact body, is broken into a number of fragments completely separated from each other, while the more supple periosteum resists. It becomes more or less torn, and remains adherent to the soft parts and

the fragments, especially in young subjects. The modifications produced in the periosteal adhesions by age are indeed considerable, and are very important as regards operations. When the splinters have been removed, the fragments must be excised to beyond the extent of the fissures. If, however, the fissure extends to the spongy tissue, and the subject is young, it need not be pursued if the soft parts are intact; but when it penetrates to a joint, an articular excision must be executed. After an excision, the ends of the bone should be brought nearer to each other, in proportion as there is little expectation of bony reproduction, which is less in proportion to the age of the patient. The silicated bandage favours the reparative process, and may require to be continued for months. In answer to a question as to the prevention of stiffness of the joints ensuing, M. Ollier replied that so long as the inflammation persists, the bandage must be left on, it being indeed the best means of limiting the traumatic inflammation; and whenever it is renewed, movements should be imparted to the elbow and shoulder. The apparatus may, in fact, be left on without renewal for a month or five weeks, and anchylosis will usually be avoided, unless the fracture is too close to the joint. In conclusion, he repeated that expectation is the rule, and that excision is only suited for particular cases. It is especially indicated when, some time after the accident, complications arise; while, when there is intra-articular fracture, it should be performed immediately. The influence of age must also never be forgotten.

ART. 203.—*A New Method of Reducing a Dislocation of the Humerus into the Axilla, with Reference to the Anatomy of the Shoulder-Joint.*

By E. P. BENNETT, M.D.

(*The Medical Record*, March 13.)

Since Dr. Bennett has adopted his method, which he calls the anatomical method, and which he claims as exclusively his own, he has never failed in a single instance of reducing this dislocation by the tractive force of one hand, and this after all the other methods had been tried and failed.

Dr. Bennett places the patient upon a common chair. He passes around his body, below the arms, a broad strong towel, the ends of which are given to a stout assistant. The next step, and the most important of all, is to firmly fix the scapula. "Without this precaution," the author writes, "you will be pretty sure to fail, pull as hard and as long as you please. To fix the scapula I direct one intelligent assistant to place the ball of the hand firmly against the acromion process. I then tie a handkerchief around the arm directly above the condyles, and make in it a loop for my right hand, then, with the arm hanging down closely to the body, I pull gently and steadily directly downwards, and, with my left hand in the axilla, the bone slips easily and quickly into place. Now in this dislocation the head of the bone lies under and in contact with the neck of the scapula, and if by any means you can depress the head of the bone to the extent of one-eighth of an inch, or even less,

there is nothing to prevent your gliding the bone easily into place, and that too, without injuring any of the joint structures."

ART. 204.—*Fracture of the Humerus, with Laceration of the Brachial Artery; Mortification of the Limb; Amputation at the Shoulder-Joint; Recovery.*

Under the care of Mr. JAMES LANE, at St. Mary's Hospital.

(*The Lancet*, June 1.)

The following case is worthy of record as an example of the not very common occurrence of laceration of the main artery of a limb, associated with a simple fracture:—

On December 12, 1871, C. E., aged thirty-nine, drayman, was thrown from his cart, the wheel of which passed over his right arm. He applied at the hospital, and the humerus was found to be broken at about its middle; but as nothing unusual was then observed splints were applied and he was sent home. The next morning he came to the hospital in great pain; the splints were removed, and the arm was found to be greatly swollen, tense, and discolored, evidently from an enormous ecchymosis; the forearm and hand were œdematous and cold, the pulse could not be felt at the wrist, and the fingers were numb. He was immediately admitted, and placed in bed; the limb was supported on a pillow with the forearm and hand enveloped in cotton-wool, while cold lotion was applied to the arm with a view to check, if possible, further effusion.

For the first two or three days it was hoped that the limb might be saved, for the swelling seemed somewhat less, the hand was not so cold, there was more sensation in the fingers, and the constitutional disturbance was trifling. These favourable signs, however, did not continue: large bullæ formed all along the limb; the forearm and hand, which at first were simply œdematous and slightly reddened, became dark-coloured and evidently gangrenous, emitting a very fetid odour; and on the 21st it was obvious that amputation could no longer be safely delayed, especially as there was now considerable constitutional irritation, his pulse being 120, and his temperature 103°.

Operation (December 21st).—The swelling extended as high as the lower border of the axilla, where it ceased somewhat abruptly, and the skin showed signs of mortification up to the same level, It was clear, therefore, that nothing short of amputation at the shoulder-joint would suffice. This was accordingly done by the "oval" incisions, commencing opposite the acromion and diverging to the anterior and posterior margins of the axilla. Anterior and posterior flaps were dissected back, and, the capsule being exposed, the joint was cut through from above; the operation being completed by the division of the vessels, nerves, and integuments in the axilla. The artery was not compressed above the clavicle, but was grasped from the wound by Mr. Owen before it was cut through, bleeding from this source being thus effectually prevented. The subsequent progress of the case was satisfactory. Union of the upper half of the wound took place by first intention, and with the

exception of some suppuration at the lower part, and a small abscess over the scapula, which required incision, nothing worth noting occurred to interfere with his recovery. He left the hospital February 2nd, 1872, in good health and condition, with the wound soundly healed.

On examining the limb after removal, a large mass of putrid coagulum was found on the inner side of the arm, but the whole of the tissues from the axilla to the bend of the elbow were infiltrated with blood, and were in a state of gangrenous disorganization. The humerus was fractured obliquely downwards and forwards at its middle, and the sharp end of the other fragment had torn the brachial artery completely across. The median nerve, however, had escaped injury. The hand and forearm were also gangrenous throughout, but the swelling of these parts, which was very great, depended entirely on serous infiltration. The effusion of blood did not extend below the elbow. The incisions made for the amputation only just cleared the gangrenous parts.

ART. 205.—*Axillo-Subclavian Aneurism Treated by Pressure on the Cardiac Side of the Sac; Sloughing of the Integument and Deep Tissues Around the Sac; Recovery of the Patient; Partial Cure of the Aneurism.*

Under the care of Mr. GAY, at the Great Northern Hospital.

(*The Lancet*, February 10.)

The following case, to which there is only one parallel (as regards treatment), in Mr. Poland's tables of subclavian aneurism, is of great interest, showing as it does the advantages and the dangers of long-continued pressure at the root of the neck.

The patient was a strong healthy man, aged forty-five. He had a tumour (presenting all the characteristics of an aneurism), about the size of a Tangier orange, at the root of the neck on the right side. The aneurism was partly covered by the clavicle. The anterior wall was very thin. Pressure on the subclavian artery caused arrest of the pulsation in the aneurism, and in the radial artery of that side. The patient had noticed the tumour for about six weeks only; but for six or eight months past he had been troubled with rheumatic pains and numbness in the right arm and shoulder.

After much consultation it was determined to try pressure on the cardiac side of the aneurism. This was commenced on the 14th of October, 1871, and was at first simply "digital," being maintained, without intermission, by relays of students and others, who all took a deep interest in the case. It was soon found advisable to substitute Mr. Cole's compress for the finger. This is a T-shaped instrument, provided with a soft pad, about the size of the end of the finger, at the bottom of the perpendicular limb, by which pressure is made on the artery. This perpendicular limb is joined to the horizontal limb (on which the compressing hand rests), and is provided with delicate springs, so that the pressure can be adjusted to the necessities of the case with the utmost nicety.

In this way the pressure was maintained, with brief periods of intermission, for four days and nights. The pressure caused considerable suffering to the patient, numbness in the hand, and an aching pain along the course of the ulnar nerve, especially where it passes behind the inner condyle of the humerus. These symptoms were relieved by the use of morphia and chloral. When the pressure was taken off, the pulsations in the aneurism and radial artery were nearly extinguished, and the bruit in the aneurism had almost subsided. It was intended to renew the pressure, but it was found that the scarf-skin was loosened, and the skin beneath it was moist and of a dusky colour. Erysipelas now set in, and began to spread in every direction, but most rapidly over the aneurismal sac and towards the shoulder. The constitutional symptoms became very grave; the temperature was subject to great variation, alternating between 96° and 102°; the tongue was dry, the pulse quick and weak, and the face dusky. Sloughing commenced, and ultimately invaded, not only the skin, but the deep tissues as well in the neighbourhood of the sac, involving the deep fascia, and destroying the anterior belly of the omo-hyoid muscle. From this part matter and sloughy tissue welled up, and exhibited movements corresponding with those both of the artery and chest. On the third day of these symptoms he was attacked with pneumonia of the right lung, which it was feared might be pyæmic. On the eighth day the symptoms abated, the wound began to granulate, and by the end of eight weeks it had cicatrized, and he was restored to tolerable health.

On examining the aneurism, it was found still to exist, but the sac was smaller and thicker, and appeared to have shifted somewhat towards the shoulder. On its distal side pulsation could be felt as of a large artery. Pressure on this vessel, as well as on the subclavian on the cardiac side, stopped the current through the sac and through the radial, and altered the character of the bruit. The force of the current through the sac and down the radial was considerably lessened.

It was observed that during the time the pressure was maintained and for several weeks afterwards, the finger-nails on that side ceased to grow, and that during recovery the back of the wrist and lower end of the forearm became covered with hair. The superficial veins have been constantly much more filled than those of the opposite limb.

Art. 206.—*Account of a Case of Resection of the Shoulder and Elbow Joints in the same Arm, for Gunshot Injuries.**

By William Mac Cormack, F.R.C.S., Assistant-Surgeon to St. Thomas's Hospital.

(*Medical Press and Circular*, March 27.)

This paper detailed the history of a French soldier who had been wounded at the battle of Sedan. The right arm in the region of the shoulder and

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* Read at a Meeting of the Royal Medical and Chirurgical Society, March 12th.

elbow joints, was extensively injured, the soft parts being much lacerated and the bones extensively comminuted by a shell explosion. The question arose whether it was at all possible to save the limb. Rather, however, than perform disarticulation at the shoulder joint, Mr. Mac Cormack determined to excise both the shoulder and elbow joints—an operation hitherto, he believed, unique. The patient narrowly escaped death from pyæmia, but he afterwards made a satisfactory recovery; and the interest of the case centres in the amount of usefulness subsequently enjoyed by the limb. Some portions of necrosed humerus have yet to come away, and in the deltoid region a sinus still remains. The elbow is soundly healed, and regeneration of the excised bones has taken place. The operation was performed superiosteally; and in the after-treatment the limb was supported on carefully-adjusted cushions—a method Mr. MacCormack prefers in most cases to employment of splints. The shoulder can now, after an interval of eighteen months, be moved freely backwards and forwards, but not raised from the side, the deltoid muscle having been almost completely destroyed by the original injury. Flexion, extension, and rotation are very perfect in the elbow, and the usefulness of the hand is nearly as good as before. Four inches of the upper end of the humerus, very greatly comminuted, were removed; and a long piece of ulna, in addition to the head of the radius and the articulating condyloid surface of the humerus, was taken away. Mr. Mac Cormack considers that he may fairly classify this case as one of successful double resection of the two principal joints in the same upper extremity.

(D) CONCERNING THE LOWER EXTREMITY.

ART. 207.—*Wound of Knee-Joint; Perfect Recovery without Suppuration under Antiseptic Dressing; Painless Distension of the Joint with Solution of Carbolic Acid.*

Under the care of Mr. COUPER, at the London Hospital.

(*The Lancet*, February 10.)

The following remarkable case is, we think, calculated to impress surgeons with the soundness of some, at least, of the doctrines promulgated by Professor Lister. In his address delivered last year at Plymouth, the Professor said: "The freedom with which joints may be opened in an antiseptic atmosphere, followed up with antiseptic dressing, is among the most striking and valuable circumstances of this treatment." What follows seems, as far as a solitary case can do so, to bear out the truth of this statement, and to present an example which is well worthy the consideration of surgeons, be they followers of Pasteur or Pouchet. We should be particularly glad to give insertion to parallel cases, whether treated antiseptically or otherwise.

On the 17th of October, J. S., aged seventeen, while chasing a lad who carried in his hand the iron of a carpenter's plane, received a

wound about an inch and a half long, close to and parallel with the outer border of the left patella. He reached the hospital about half an hour after the accident. Mr. Curling, the house-surgeon, found that the sharp angle of the instrument had entered the joint, making an aperture which, although less extensive than the skin wound, yet easily admitted the tip of the (previously carbolized) forefinger far enough for him to feel the articular surface of the patella. Having ascertained that no foreign matter was lodged in the joint, he injected as much of the saturated watery solution of carbolic acid (one part of acid to nineteen of water) as the joint would hold. A large metal syringe, provided with a tapered bone nozzle, was employed for this purpose. The nozzle was introduced so as to plug the aperture in the joint completely. When the piston was then forced down the loose synovial bag underneath the tendon of insertion of the quadriceps muscle was fully distended. There was thus no doubt that the solution was brought in contact with the entire surface of the articulation. Before the syringe was used the skin wound was closed by a continuous suture of carbolized gut, with the exception of a portion sufficient for the nozzle to enter, in which the stitches were left unfastened. By this means the skin was plugged round the nozzle, and the solution retained for a minute or two. The latter was then allowed to escape, and the remaining stitches were secured. As all bleeding had ceased spontaneously, it was deemed unnecessary to provide a drain for imprisoned fluid; the wound was therefore closed from end to end. The knee was then enveloped in about sixteen layers of carbolized muslin, extending some inches above and below the wound. A small piece of green silk protective was interposed between the wound and the gauze to prevent irritation of the raw surface by direct contact of the carbolic acid. Finally, the limb was bound to a straight posterior splint to keep the knee at rest.

On the following day the lad was free from pain, even when the knee was slightly pressed. He had slept and eaten as well as usual. On removing the dressing under carbolic spray (1 part of acid to 99 parts of water), the joint was found very slightly puffy, but there was no fluctuation which the fingers could appreciate. When questioned as to the effect of the injection, he replied that the knee "felt hot and burning for about ten minutes after, but had ever since been quite comfortable." He treated it as a light matter, and was positive that no vestige of discomfort remained fifteen minutes after the injection. Six hours after it the temperature of the axilla was 100·5°. Eighteen hours after it had reached its maximum, 101°. Thenceforward it steadily declined, and was normal on the evening of the third day.

On the 19th, Mr. Couper again removed the dressing, not because a change was needed, but in order to satisfy himself as to the condition of the knee. The wound and the dressing were perfectly dry. They were in the same state when re-examined on the 21st. There was no redness at the wound; its lips had adhered. As the gut stitches caused no irritation, they were not disturbed. On the 28th they formed, with some dried serum, a thin brown scab, adherent to the wound. A few days later (November 1st) this dropped off, leaving a perfect scar. As a precaution the splint was not removed until November 1st. The knee could then be flexed without pain. The lad was kept under observation

until November 16th, when he was discharged with perfect motion in the knee. During the last week of this time no trace of swelling remained, and he was up all day, and occasionally out of doors.

Art. 208.—*Report of a Case of Spontaneous Gangrene of Both Feet.*

By Frederick J. Gant, F.R.C.S., Surgeon to the Royal Free Hospital.

(*Medical Times and Gazette,* May 11.)

At a meeting of the Clinical Society of London on April 12th, Mr. Gant related a case of spontaneous gangrene of both feet in a messenger-boy, aged sixteen, who, when he was about seven years old, had a decidedly bluish aspect, was always breathless, and complained of feeling cold even in warm weather. The boy himself stated that he had suffered from shortness of breath, with occasional dyspnœa, ever since he could remember; otherwise the boy's general health had remained unaffected. Latterly he had been much exposed to cold during very severe weather. After a day's exposure, during the night, when in bed, his feet "burned very much;" and the next morning the great toe and two adjacent toes of both feet were nearly black, and quite insensible. In this state he walked to the Royal Free Hospital. After admission, gangrene progressed until it reached the dorsum of both feet, presenting to some extent the appearance of senile gangrene. But the livid blueness and œdema of both legs up to the knees contrasted with the pale, shrunken condition of the legs as observed in senile gangrene; and the gangrene itself, at this early stage, was more succulent or moist than dry. Pulsation was quite free in both the tibial arteries of the feet. A physical examination of the chest was made by Dr. Cockle. The heart's action was feeble but regular, and unaccompanied by any appreciable murmur. Pulsation could be readily seen in both carotids, and a diffuse forcible pulsation in the external jugular veins. Pulse at the wrist 27 per minute, small, feeble, irregular. The only pulmonary signs were emphysema, and slight bronchitis at the bases of both lungs. Respiration was oppressed—16 per minute. The temperature in the axilla was—morning 103·8°, evening 101·6°. The urine was scanty and high-coloured, with a copious deposit of greyish-brown lithates and of albumen. The patient was lethargic, dull of understanding, and he spoke with a stridulous voice and broken articulation. Occasionally, when the heart's action became very feeble, and dyspnœa very urgent, fits of unconsciousness occurred, accompanied on one such occasion with epileptic convulsive movements of the upper limbs and face, this state lasting two hours. A line of demarcation having formed on the dorsum of the feet, Mr. Gant performed double amputation by modifications of Chopart's and Hey's operations. Both stumps united soundly in a week. But the cardiac and pulmonary conditions recurred at intervals

with increasing severity; and in a fortnight the patient sank into a state of coma, and died quietly. The post-mortem examination showed that the heart in its right half was the seat of disease, the origin of which would seem to have been at a very early period of life. The right auriculo-ventricular opening was enlarged sufficiently to admit two, or even three fingers, but the three segments of the valve were healthy; the auricular cavity was dilated and distended with blood to more than twice its natural size; the wall of the auricle, not thickened in any part of its extent, was, between the musculi pectinati, reduced to a membranous state; the foramen ovale was entirely closed; the right ventricular cavity was also somewhat enlarged, and equally distended with blood, but the wall was not hypertrophied. The pulmonary valves were quite healthy. On the left side of the heart no morbid condition was discovered, either as regards the cavities or the valves. Recent pericarditis had occurred. Both lungs were emphysematous, but the texture generally was much congested, and the bronchial tubes were engorged throughout with frothy mucus. Recent pleurisy had taken place on both sides of the chest The abdominal viscera generally were much congested, and the liver and kidneys considerably enlarged by interstitial deposit, passing into fatty degeneration. The brain exhibited marked venous congestion. Mr. Gant was disposed to draw the following two conclusions :—1. That the gangrene of both feet, depending evidently on systemic venous congestion, was caused by the enlarged state of the right auriculo-ventricular opening; and the accompanying dilatation of the auricle and ventricle, being thus essentially cardiac, although the immediate and exciting cause might have been exposure to cold. 2. That the immediate cause of death was pericarditis, pleurisy, and more particularly capillary bronchitis.

Art. 209.—*On Compound Fracture of the Patella.*

By Alfred Poland, F.R.C.S.

(*Medico-Chirurgical Transactions*, vol. liii.)

The following are the conclusions to which Mr. Poland is led by a study of the cases which he has collected :—

"1. That compound fractures of the patella are not necessarily mortal injuries, and do not require immediate amputation or resection, except when complicated with other injuries of the joint structure. In this latter case the injury done to the integuments and surrounding tissues is such that amputation is preferable to excision.

"2. In all cases we should attempt to save the limb, and adopt the ordinary treatment as for simple fractures of the patella, whether comminuted or otherwise. The wound should be accurately closed by sutures, but employed with judgment; strapping and relays of ice should be constantly used.

"3. That when suppuration fully sets in, and which must always be expected in severe lacerations and in patients of unsound condition, we

must not hesitate for one moment to make free incision into the joint. Drainage tubes may be used, but they are unnecessary.

"4. Amputation or resection is only to be resorted to when the powers of the patient fail to repair the injured joint.

"5. The extraction of fragments has been resorted to both primarily and secondarily with success; but, as a rule, detached and loose portions had better be removed at once, providing this does not necessitate further injury to the joint; if attached and firmly adherent, they had better by far be left to take their chance of co-adhesion, or to be thrown off and detached during the suppurative process."

Art. 210.—*On Ingrowing Toe-Nail.*

By John Wood, F.R.S., F.R.C.S., Surgeon to King's College Hospital.

(*British Medical Journal*, June 8.)

Mr. John Wood, in removing an ingrowing toe-nail, at King's College Hospital, on Friday, May 24th, said that this affection, which seemed trivial, was of more consequence than was supposed: it was a serious matter to the patient, and caused him much pain. The principal cause he conceived to be the absurd but fashionable custom of wearing very small-toed boots; and the next, the false economy of wearing much-darned stockings. The savage races were never troubled with ingrowing toe-nails because they had never been tempted to wear narrow-toed boots. The commonest mistake made in the case was to blame the nail for the pain; but it was not the nail that was at fault, but the skin surrounding it. This became thickened and ulcerated, and grew until the nail was overlapped. The nail became subsequently bent and grew irregularly; but it was the highly sensitive and rapidly growing skin that gave the pain. Mr. Wood removed the half of the nail of the patient present, after it was frozen by the spray. He recommended broad-toed boots, scraping the centre of the nail thin, or a V-shaped incision of the nail, and caustic to any ulcer present, in cases not so bad as the one now dealt with by excision.

Art. 211.—*Chronic Disease of the Knee-Joint; Osteo-Myelitis of Femur; Amputation of Thigh in Upper Third.*

Under the care of Mr. C. S. Jeaffreson, at the Hospital for Sick Children, Newcastle-upon-Tyne.

(*British Medical Journal*, June 8.)

The notes are reported by Mr. George Ward.

A. F., aged 9, a highly strumous and emaciated child, had suffered more or less for two years with disease of the knee-joint. Eight months

before admission she was in the hospital, when several abscesses were opened. It was thought at that time that resection might be performed with success; but the mother refused to allow any operation, and removed the child. On her re-admission the lower limb was greatly atrophied, semiflexed upon the thigh, and partially dislocated backwards. There were no fewer than seven openings in the neighbourhood of the knee-joint, all discharging large quantities of pus; and the whole of the femur was enlarged, especially in the lower two-thirds. The child's general condition was that of extreme exhaustion. Amputation was performed at the upper third of the thigh by means of an anterior and posterior flap cut from without. The bone when divided was seen to be enlarged, its external compact layer thinned, and the internal cancellous tissue expanded and softened; it had, in fact, all the appearances of osteo-myelitis. The stump was carefully but not antiseptically dressed. Union took place almost entirely by the first intention; no pus at any time escaped except in the course of the ligatures at the inner corner of the wound, and in less than a fortnight the stump was perfectly healed.

Art. 212.—*On Popliteal Aneurism.*

By Cooper Forster, F.R.C.S.

(*Medical Times and Gazette*, February 24.)

At a meeting of the Clinical Society of London, on January 26, Mr. Cooper Forster read a paper "On Two Cases of Popliteal Aneurism," the treatment of which, though not novel, was calculated to elicit the opinion of the Society on a most important point of surgical practice. The first case was that of a labourer, aged thirty-five, sent to the author by Dr. Poole, of St. Paul's Cray. An intemperate man, with good general health, he had noticed, ten days before admission into the nospital, pain in his left knee, followed in a few days by swelling. He came under notice with all the signs of popliteal aneurism. The treatment, which throughout was by means of instrumental pressure and flexion, extended over an interval of fifty-five days. In the first instance, this was applied by a dead weight on the artery in the groin, and by a screw-tourniquet, without chloroform. A Reid's compressor was subsequently used in place of the weight. The femoral current was by this means entirely arrested for some hours each time; but this failed to produce the desired effect, and chloroform was afterwards administered, while the pressure was kept up for periods which varied in duration from nine hours and a half to four hours. The sac gradually became smaller and harder, but pulsation had not finally ceased till December 23. The man left the hospital well on January 3. The second case was that of a gentleman, aged thirty-four, strong and hearty, given to athletic exercise, who felt pain in the calf of the right leg five months before he first came under notice; and two months later he had pain and pulsation in the popliteal space. Two months more elapsed, during which time he walked about and took no notice of his leg, and then he consulted a surgeon, who applied instrumental

pressure to the sac itself. This gave excruciating pain, and no improvement resulted. When the author saw him, the popliteal space contained an aneurism the size of a small orange, in which pulsation was very strong, and not arrested by flexing the leg to the utmost. Much swelling of the leg, moreover, existed, with excoriation of skin, the result of the previous treatment. The treatment was by pressure—instrumental for the first three days, by means of weights in the groin and a tourniquet in the middle of the thigh; this produced no effect. Digital pressure was then resorted to, three of the patient's friends compressing the femoral alternately for periods of ten minutes, the author of the paper sitting with his hand on the tumour to guard against the return of pulsation. The aneurism was cured by this means in three hours and a half. Mr. Forster thought that, to insure success, the great point to be attended to was that the current of blood through the sac should be completely arrested, and this in opposition to the view first held by Bellingham. Another question also arose as to when pressure, if adopted, should be discontinued in favour of ligature, and as to when it was unadvisable in the first instance. The author, from a review of his whole experience in this disease, questioned whether pressure would not always be successful if tried with patience, and carried out with care. And for his part, he expressed the opinion that the disadvantages, even where chloroform was necessitated for long periods, were so insignificant and the *primâ facie* physiological arguments so strong in its favour, that he did not hesitate invariably to try it, and as yet he had done so always with success.

Art. 213.—*Amputation of the Thigh for Disease of the Knee-Joint.*

Under the care of Mr. Henry Smith, at King's College Hospital.

(*The Lancet*, June 1.)

It is such a rare thing to witness an amputation of the thigh for disease in the joint alone at this hospital, that we record the following case, which presented certain exceptional features that, in the opinion of Mr. Smith, precluded any other operation.

The patient was a young man, aged twenty, who had suffered more or less from disease of the knee for three years, and had been under various treatment in hospitals and elsewhere, sometimes improving and then retrograding. He was admitted into King's College Hospital in March, at which time there was considerable tumefaction of the knee and wasting of the thigh; there was severe pain on pressure over the patella and the external parts of the joint; frequent painful startings of the limb occurred at night; and the patient was much reduced in general health. Mr. Smith ordered local and general treatment, with the hope that anchylosis might occur; but the symptoms continuing, it was resolved that excision of the knee should be performed. A very

careful examination of the patient, however, was instituted, and it was ascertained that the urine contained a large quantity of albumen. Under these circumstances the operation was deferred, with the hope that the quantity of albumen might diminish; but no material change occurred in that respect, and amputation was determined upon and performed, the ordinary flap operation being executed. On examining the joint, it was found to be in progress of entire disorganization, the cavity being filled with purulent matter, the cartilages ulcerated, and the synovial membrane degenerated.

Mr. Henry Smith, in his remarks, stated that his pupils would be surprised to see an amputation of the thigh performed for disease of the knee-joint alone in a young man, and, in fact, he had had a great struggle to bring his mind to perform this operation; but with the evidence they possessed of the presence of degeneration of the kidney, he considered it would be highly imprudent to perform excision of the knee-joint. For although he believed the shock of the two operations was about equal, there could be no doubt that in the long run there was a greater call upon the constitutional powers after excision. He had been educated in the principle that amputation of the thigh should not be adopted for disease of the knee-joint alone; but there were exceptions to this rule, and the case before them presented one of these exceptions. Much as he regetted having had to adopt the step, he was firmly convinced that he had done wisely in rejecting excision, whatever the result might be.

Art. 214.—*On Excision of the Knee-Joint.*

By James Spence, F.R.S.E., Surgeon to the Queen in Scotland, Professor of Surgery in the University of Edinburgh.

("Lectures on Surgery," parts iii. and iv.; Edinburgh, 1871.)

On the subject of excision of the knee-joint and its advantages, as compared with amputation, Mr. Spence says:—

"Excision of the knee-joint, so far as the operation has yet been tested, can scarcely contrast favourably with amputation at the lower part of the thigh for disease of the knee-joint. I am aware that favourable comparisons have been made by contrasting cases of excision of the knee-joint with amputations of the thigh generally; but the comparison to be a fair one must be between cases of amputation performed for diseased conditions similar to those for which the excision is had recourse to. My experience of amputation has shown me that not only the extent of the limb removed, but also the nature of the disease for which it is removed, make a great difference as to the success or fatality of the operation, and that amputation in cases of simple strumous disease of the knee-joint affords the greatest amount of success; and this is the class of cases in which we perform excisions. With all my feelings in favour of excision of the knee-joint as a substitute for amputation of the thigh, I cannot help believing that in certain conditions it is more dangerous than amputation, and that the character of the operation is likely to be

perilled by its being indiscriminately resorted to. In reference to an absolute advantage of excision of the knee over amputation, as regards the results in successful cases, no one can doubt that, and I think the question now to be considered in regard to the comparative mortality of these operations is to endeavour to discriminate between the cases in which the one or the other of these operations presents the least risk of life. Here, as in amputations, it is difficult or impossible to gain much from mere general statistics. What we want to know in considering such a point is, all the circumstances of the cases operated upon which may have influenced the result, and hence the surgeon will learn more from, and naturally be more impressed with the result of his own cases, or of cases which he has opportunities of closely observing. My own experience of excision of the knee-joint is comparatively limited, and therefore in stating to you the results, any deductions I may draw from my cases are to be regarded as merely suggestive, not positive."

Art. 215.—*A Case of Comminuted Fracture of the Leg; Resection and Suture of the Fragments.**

By M. Letenneur, of Nantes.

(*Gazette Hebdomadaire*, No. 2, 1871.)

An individual, aged eighteen years, was admitted into the Hôtel Dieu of Nantes, on July 10th, 1868. This youth had imprudently placed his hand upon a strap which was revolving round a flying wheel. The hand and also the clothes were seized, and the body was jerked into the air, falling at a distance of some metres. On admission, the following lesions were made out: A fracture of the surgical neck of the left humerus; a contused wound, occupying almost the whole of the right side of the back, and involving the muscles; a comminuted fracture of the right leg, with a wound and protrusion of osseous fragments. The injured limb was placed on a splint, and moderate traction was made on the foot. The anterior tibial artery had probably been torn, as no pulsation could be felt on the dorsum of the foot. The posterior tibial was intact, and this fact, together with the youth and strength of the patient, induced M. Letenneur to refrain from immediate amputation. In order to moderate the inflammatory symptoms, the limb was submitted to continuous irrigation for eight days; it was then dressed with charpie and camphorated alcohol and Labarraque's solution. The traumatic fever was not severe, and the patient retained his appetite. Simple cerate was applied to the wound in the back, and an immovable apparatus to the arm and shoulder. Purulent collections about the fracture in the leg obliged M. Letenneur to make counter-openings. The superior and inferior fragments of the tibia were much notched, and between were splinters of bone, partly imbedded in the muscles. A great number of these were removed, care being taken to separate the

* Communicated to the Société de Chirurgie of Paris.

periosteum. On putting together these fragments, it was estimated that the bones of the leg would be shortened to the extent of three or four centimetres. There was a constant tendency in the superior fragment of the tibia to project outwards, and there was much riding posteriorly on the part of the inferior fragment. As this displacement could not be rectified by ordinary means, M. Letenneur resected the ends of the fragments, and united them by suture. The fragments were thus fixed tolerably firmly, and formed in the centre of the limb an internal splint, around which callus might be deposited without any movement being able to destroy this process of reconstruction.

This operation was performed on the twentieth day after the accident. There was then a shortening of about seven centimetres. Considerable though circumscribed swelling subsequently took place at the seat of fracture. Pressure of the finger at this part caused crackling, indicating the rupture of osseous trabeculæ. This swelling at last acquired great proportions, and enclosed the fragments and the necrosed osseous splinters. M. Letenneur then feared the development of an exuberant callus, hollowed with abscesses, and constituting an interminable malady. In the month of October the callus had acquired some solidity, and the shortening was not more than four centimetres; the limb, therefore, had been elongated by three centimetres. This elongation would not have taken place at the seat of the fracture, as the metallic suture was still in place, and the corresponding fragments were not detached. Finally, in the month of February, the fragments united by the suture became loose, and were then withdrawn with the wire; together they were about eleven centimetres in length. The callus was very solid, but did not then permit the patient to walk. It is remarkable, states M. Letenneur, that the osseous suture applied to bones already dead produced no change in these, and that the openings made by the gimlet had exactly the same dimensions in February as they had when first made. This proves that metallic threads, when they cut gradually through osseous tissue included in the loop of the suture, do so through vital action, and not by mechanical force.

The patient remained in the hospital for several months, and after his discharge was readmitted, in order to have some small sequestra removed. When at last he was able to resume his occupation, the shortening did not amount to more than two and a half centimetres. M. Letenneur directs particular attention to the elongation of the bone in this case, which was sufficient to efface the consequences of a loss of substance amounting to seven centimetres. He excludes the sequestra which were removed at a later period, which taken together add a length of eleven centimetres. At this period the callus was solid, and its length was not altered in any sensible manner. The elongation, then, in this case had occurred at the extremities of the bones. In 1856, M. Baizean communicated to the Academy of Sciences a memoir, in which this phenomenon of pathological physiology was pointed out. In 1869, Langenbeck made a communication on the same subject to the Society of Medicine of Berlin.

Art. 216.—*On Contusion of the Sciatic Nerve.*

By Dr. Lorinzer.

(*Allgemeine Wiener Medizinische Zeitung*, No. 43, 1870 ; *Gazette Hebdomadaire*, No. 43, 1871.)

"Cases of sciatic neuralgia, in which contusion is invoked with more or less reason as a producing cause are numerous, but cases of contusion of the sciatic nerve, in which traumatism is really the sole cause of the painful symptoms, are, on the contrary, very rare.

The first case reported by Dr. Lorinzer is complex ; it was one of fracture of the neck of the femur, accompanied and followed by persistent sciatic pains ; the other three cases, according to the author, were examples of contusion of the sciatic.

The subject of the first case was a strong man aged fifty-six years, who in skating fell upon the right buttock. The pain was so acute as to compel the patient to keep to his bed for some time.

"In the second case a woman of the same age had fallen off a stool ; she could not get up without assistance, and was carried to bed. The pain was so intense at first that a complete examination could not be made, the least movement, and a touch merely over the injured hip produced extremely painful muscular contractions. On the following day the diagnosis was established.

The third case was one of a powerful man who slipped upon a piece of ice, and fell upon his buttocks ; the ground was hard and frozen. He could not rise by himself.

The symptoms of contusion of the sciatic nerve were analogous in these three cases, and the progress also was similar.

Immediately the contusion is produced, there are acute pains along the course of the nerve ; active or passive movements increase the pain so much that it becomes intolerable, and the patients refuse to be examined. These pains at first are felt more acutely at the posterior part of the thigh, but they may extend to the anterior and internal surfaces of the limb. They are relieved during absolute repose, but reappear with the slightest movement of the thigh, and are accompanied by very troublesome muscular contractions. After twenty-four or forty-eight hours the sensibility is sufficiently diminished to permit the necessary movements for an examination. Naturally, the surgeon endeavours in the first place to find out whether there be a fracture of the neck of the femur. It is to be remarked that in these various cases there was an outward deviation of the limb. Absence of abnormal mobility of the thigh and pelvis, and of crepitation during movement, and shortening of the limb, were the chief reasons for the diagnosis made by Dr. Lorinzer.

The treatment carried out by the author consisted in the patient's maintaining the horizontal position, the thigh being kept semi-flexed by means of a pillow. It was necessary to keep the patients in bed for six or seven weeks. The pain gradually ceased, but the muscular contractions, together with a sensation of formication, often returned.

Finally, passive and active movements were undertaken progressively, and with prudence. The course of the affection is slow and troublesome, and the neuralgic pains may continue for a long time.

Art. 217.—*Report of a Case of Osteo-Sarcoma of the Femur.*

By John Croft, F.R.C.S.

(*Medical Times and Gazette*, May 11.)

At a meeting of the Pathological Society, on April 16th, Mr. Croft related the following case of osteo-sarcoma of femur:—J. R., aged eighteen, in May, 1871, was the subject of a tumour as large as a fist on the front of the lower third of the left tibia. It had been growing seven months, and appeared to be an osteo-sarcoma. The limb was amputated no higher than the tubercle of the tibia, at the desire of the friends. On section, the tumour was of a graduated ruddy colour, was very vascular, and consisted of a soft structure, supported by a reticulum containing osseous spicules. The reticulum was composed of fibres and spindle-shaped cells, and in many places presented growths of bone, including canaliculi. The alveoli contained cells and nuclei of various forms—round, ovoid, polygonal, and even caudate. These all were multi-nucleolated, and many cells were multi-nucleated. The surface of the tibia was eroded, and the growth had invaded the medullary structure. The patient quickly recovered from the amputation, and returned to his employment. Four months after the operation he noticed that the knee had begun to swell. On March 15, 1872, he was readmitted into St. Thomas's Hospital with a knee-joint nineteen inches and five-eighths in circumference. A femoral gland was as large as a small egg. He was suffering severely, and the growth was increasing rapidly. On April 3 amputation at the hip-joint was performed, and the enlarged glands were dissected out. The patient had made an excellent recovery from the effects of the operation. On examination of the limb the tibia was found to be quite free from the disease. The joint had not been invaded. The growth appeared to have sprung from the condyloid extremity of the femur. Mr. Stewart, curator of the museum, had injected the tumour, but only partly succeeded—sufficiently to show great vascularity. Colour of section varied from greyish-white to chocolate. Septa radiated from a small centre of cicatrix-like fibrous texture, forming a reticular structure. The stromal tissue and the cells and nuclei in the alveoli were composed of elements similar to those found in the first tumour. The same sort of osseous deposits were also observed. The gland tumour was soft and brain-like on section; it yielded a juice rich in round and ovoid nuclei, containing several nucl oli. After hardening in chromic acid, this manifested a reticular structure, which consisted of connective tissue. Mr. Croft drew attention to the fact that the growth had not recurred in the stump of the bone on and in which it had been situated. He thought the character of the stroma and the cell-shape distinguished it from encephaloid cancer.

Art. 218.—*On the Treatment of Fracture of the Femur in Infants by an Apparatus of Gutta-Percha.**

By M. Gueniot.

(*Gazette Hebdomadaire*, No. 4, 1872.)

"Fractures of the femur in newly-born children and produced usually on delivery by traction on the superior part of the thigh in the fold of the groin, are generally situated in the superior third of the bone. The reduction is often easy; but the application of the retaining apparatus is very difficult; in the course of a few hours it has slipped and has to be applied again. How can this inconvenience be remedied? I attempted several means, but to no purpose. In one case, observing that the two fragments formed an antero-external angle, I decided upon applying a resistant belt round the pelvis, and fixing to this something which would press upon the angle of the fracture.

"On November 29th, 1871, a very weak infant, who had been born four days previously, was brought to me with a fracture of the right femur in its middle third. An apparatus previously applied to the whole length of the limb had caused by its pressure some œdema and redness. I replaced this by another and lighter one formed of sheets of cardboard, but the movements of the limb and the shortness of the upper fragment of the thigh-bone rendered retention impossible. I endeavoured but in vain to fix the apparatus to the root of the limb by means of some turns of bandage, which were passed round the trunk and carried as high as the shoulders; this apparatus, however, was always found out of place on the following morning, and the fragments of bone formed an angle with the apex directed forwards and outwards. This inconvenience I had always met with in cases previously under my care. In the infant there is a great tendency in the thigh to be flexed upon the abdomen, the attitude which is taken before birth. To remedy this I have devised the following apparatus.

"It is formed of a layer of gutta-percha, which one fashions so as to make two hollow splints solidly fixed together. The first, the dimensions of which are proportioned to the size of the child, is intended to cover the two anterior thirds of the circumference of the trunk; the second, of less dimensions and joined at an angle to the first over the fold of the groin, is intended to surround the superior two-thirds of the fractured limb over the three antero-external fifths of its circumference. Thus it compresses the summit of the angle formed by the fragments, and maintains reduction. The rest of the limb is free, the genitals and the buttocks being also left exposed. In the infant which you see here there is no tendency to displacement; the injured limb is not shortened. The callus is regular, solid, and the functions of the limb are entirely restored. With regard to the general health, in spite of the original debility, it has become as satisfactory as possible."

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* Communicated to the Société de Chirurgie of Paris.

PART III.—MIDWIFERY.

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

(A) CONCERNING PREGNANCY AND PARTURITION.

Art. 219.—*Anæsthetics in Midwifery.*

By Dougan Clark, M.D.

(*American Journal of the Medical Sciences*, January.)

The general practical principles inculcated in this paper are expressed by the summary drawn up by Dr. Clark, as follows :—

"1. In perfectly normal labours of moderate suffering and duration, and without untoward symptoms of any kind, anæsthetics should not be resorted to.

"2. If the pains even in an otherwise normal labour be inordinate or protracted, especially in the second stage, anæsthesia is indicated.

"3. Irregular pains, exhaustive in their character and inefficient, may be tranquillized by anæsthesia, and afterwards the action of the uterus is, as a rule, more regular and efficient.

"4. Threatened convulsions may be averted, and those existing may be terminated, by a judicious use of anæsthetics. In cases of eclampsia, however, with congestion of the brain, or organic disease of that organ from any source, they are contra-indicated.

"5. Anæsthesia is proper in all obstetrical operations, whether manual or instrumental. It is useful in eversion, embryotomy, and the use of the forceps, and indispensable in Cæsarean section.

"6. Anæsthetics are among the most reliable means of overcoming rigidity of the perineum, os uteri, or vagina, especially when depending upon muscular excitement.

"7. Choloroform or ether may be employed for anæsthesia, of which chloroform is the most convenient, agreeable, and efficient, but ether in midwifery, as in surgery, is the most safe.

"8. Chloroform is much less dangerous in midwifery than in surgery, so far as past experience can determine.

"9. It is not necessary, as a rule, to bring about complete insensibility, but only sufficient to obtund the severity of the pains. The exceptions to this rule will readily suggest themselves to a thinking mind."

Art. 220.—*On the Necessity of Abstaining from Surgical Proceedings during Pregnancy and after Delivery.**

By M. Tarnier.

(*Gazette Médicale de Paris*, No. 13, 1872.)

On March 6, 1872, M. Tarnier presented to the Société a tumour of the size of the closed fist, which had been developed in the thickness of one of the labia majora.

Six months before the commencement of her pregnancy, the patient became aware of a tumour developing in one of her labia. Stationary, or nearly so for a certain time, it then increased rapidly in size, and enlarged in all directions during gestation. After delivery it diminished slightly in size. It presented this peculiarity, that it was soft and gave the sensation of a liquid contained within it.

At this period many surgeons saw the tumour, and their opinions concerning it differed; some thought it was a cystic tumour, others, that it was solid, without specifying at the same time its real nature. They were however unanimous with regard to the necessity for an operation which was afterwards practised.

There was no difficulty in the ablation of the growth. Enveloped in lamellar cellular tissue, it was readily enucleated notwithstanding its prolongations in various directions.

The removed tumour was solid and had a fleshy aspect. Section showed a fibrous appearance, with a series of concentric bundles developed in the midst of the general mass. Microscopical examination showed that its composition was represented by bundles of smooth muscular fibres—in other terms that the growth was a myoma with unstriped fibres.

There was nothing peculiar in the nature of this tumor. It corresponded completely to ordinary facts, and by itself offered no kind of interest. It gave rise however to a discussion of great importance with regard to several points of practice.

Recalling the nature of the general physiology of pregnancy, namely, congestion of all the organs, and all the tissues in the neighbourhood of the womb, M. Depaul mentioned several cases bearing upon this question of operating after delivery.

A young woman who was pregnant received a small wound on one of the labia majora, from which there was hæmorrhage which rapidly became fatal. Here a varicose vein had been involved, and an injection made after death into the inferior vena cava flowed away in a stream from the small wound.

Another example. Hæmorrhage occurring in a woman who was in the eighth month of pregnancy had rendered the patient extremely anæmic. Vagino-uterine plugging had been practised, but notwithstanding this the hæmorrhage continued. In examining with great care the external organs of generation M. Depaul perceived a small

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* Communicated to the Société de Chirurgie.

black spot situated near the sheath of the clitoris. From this the blood had proceeded. A punctated cauterization made with red-hot iron at once arrested the bleeding, and the woman was delivered without any accident a month later. Here again there had been a rupture of a varicose vein, and this was the source of the evil. On both the large and small labia a number of more or less prominent varicosities were observed.

Whether hæmorrhage occurs from the surface or from the centre of the tissues (thrombus of the labia majora), the mechanism is the same. In both instances a rupture of varicose veins takes place, and the blood flows the more abundantly the more the fluid has become modified.

To the same order of facts, that is to say to hypertrophy of all the tissues, it is necessary to refer on the one hand the frequent development of vegetations in pregnant women, and, on the other hand, the increase in size of tumours developed in the uterine tissue or in neighbouring parts.

In 1869, M. Depaul brought before the Société de Chirurgie some examples in order to demonstrate hypertrophy of fibrous bodies of the uterus produced at the same time as hypertrophy of the whole organ, increasing with this, and afterwards simultaneously with the uterine tissue returning to their primordial condition. This increase in size affected tumours presenting an identical composition and tumours intimately connected with the organ itself, since hence they had their starting point. M. Depaul brought forward a series of arguments to render comprehensive the possibility of this fact and to favour its acceptation. Notwithstanding the opposition of some members the fact was accepted and no doubt remained in the minds of the majority.

And, indeed, what is more simple to comprehend? There is hypertrophy of all the elements of an organ, vascular hypertrophy, hypertrophy of its muscular fibres; and now a tumour is developed at its expense, having a structure absolutely similar, and it is supposed that the increase in size is not brought about by its elements.

In M. Tarnier's case there was an external tumour which could be distinctly felt; it increased simultaneously with the pregnant uterus, and diminished gradually in size after delivery. There could not be the least doubt; there was an absolute identity between the two series of facts; and yet it can be said that there was an excess of demonstration seeing that the tumour situated in the thickness of the labium had no kind of relation with the uterus. Augmentation of volume in one and the other case, here was the fact the demonstration of which is owing to M. Depaul.

Various authors in France and abroad have inquired whether tumours generally undergo a more rapid increase in size in consequence of pregnancy. Many examples have been cited, but none of these have hitherto proved very conclusive.

We arrive now at the practical questions which have been formulated very plainly by several members of the Society:—

1. Ought one to touch tumours or vegetations developed in the neighbourhood of the genital organs during any period of pregnancy?

With the exception of M. Desprès, who does not hesitate to cut away and to cauterize vegetations, the other members, including MM. Depaul,

Guéniot, Verneuil, and Tarnier, were opposed to any operative proceedings and advised abstention. Except in the case where the vegetation acquires enormous proportions, and attains the size almost of the fœtal head, a growth of this kind ought not to be touched for two reasons. In the first place there is a risk of causing abortion. A simple cauterization sometimes suffices to produce abortion with all its consequences. If, on the other hand, a cutting instrument be employed, there may be hæmorrhage, and hæmorrhage, as has been shown by the cases cited above, is always to be feared under these circumstances.

M. Verneuil advises a still greater reserve with these operations. Whenever a woman is pregnant one ought, according to this surgeon, to abstain from performing the least operation, no matter in what region of the body. Thus when a pregnant woman comes under treatment for an abscess of the vulvo-vaginal gland, he considers it necessary to let it open spontaneously and not to touch it with the bistoury. M. Verneuil quoted a case in his practice in which he had opened an abscess of the vulvo-vaginal gland. Lymphangitis was developed, abortion took place, and consecutive metro-peritonitis carried off the patient. Cases of abortion after operation are not rare. It generally takes place between the fourth and tenth day; it is necessary to inquire therefore what is its immediate cause. It is certain that if the operation had not taken place, expulsion of the product of conception would not have occurred; but still it is not to the operation itself that one ought to attribute the immediate cause of these uterine contractions, else they would take place during the first twenty-four hours. The contractions are due rather to blood-poisoning, caused either by absorption of the putrid products which are developed on the surface of every wound, or to an erysipelatous or lymphatic complication.

The abstention recommended by M. Verneuil has however its limits, and in the following, reported by M. Guyon, his conduct would have been identical. The patient was a pregnant woman who suffered from an abscess symptomatic of a lesion of the femur. She was visibly sinking; the appetite was gone, emaciation became more marked every day, and fever came on every evening. In consequence of all these symptoms M. Guyon decided upon intervening at the fifth month. The abscess was opened and drainage carried out. There was no subsequent hæmorrhage, and abortion did not follow. Labour took place at the proper time, and the patient left the hospital quite cured some months later.

From all these facts this point of practice may be deduced, that one ought not to operate on a pregnant woman except in a case of absolute necessity.

2. For how long after delivery ought one to put off an operation upon women, either for removing a tumour or for curing a vesico-vaginal fistula?

It is above all things necessary that the tissues should be restored to their original condition, and that those which have undergone a kind of hypertrophy in all their elements should become supple, firm, and elastic. One ought to wait for three months at least before attempting the slightest operation, and the true limit has been correctly indicated by M. Guéniot, who waits for the return of the functions.

Thus when one wishes to operate on a vesico-vaginal fistula or on a lacerated perineum, the physiological return of the menses should be waited for, so that the operation may be performed without risk of failure and of the sutures coming away prematurely in consequence of the excessive friability of the tissues. The same lapse of time should also be allowed whenever a tumour has to be removed, for the return of all the functions, a greater vitality on the part of the tissues, and a greater facility for their cicatrization.

Art. 221.—*On the Peristaltic Movements of the Uterus.**

By Dr. Oser and Dr. Schlesinger, Jun.

(*Allgemeine Wiener Medizinische Zeitung*, No. 51, 1871.)

Up to a recent period the teaching with regard to the peristaltic movements of the abdominal viscera was obscure, and latterly physiological views concerning the influence and causes of peristalsis have undergone divergence. Dr. Brown Séquard has pointed out that the quality of the blood exerts an influence over the movements of the intestines. It has also been shown by Basch and Mayer that a venous state of the blood has a very stimulating action on the peristaltic movements of the intestines. With regard to the movements of the uterus the views of authors differ still more. Some make them dependent on the brain, some on the spinal cord, some on the sympathetic and ganglions, others on the sacral plexus. Dr. Oser, in order to determine this question, has experimented on a great number of dogs, cats, and rabbits.

The experiments consisted in tracheotomizing the animals and then administering curari. Respiration was kept up by means of a canula, and could be suspended at the will of the experimenter. The abdominal cavity was next opened and the generative organs exposed. After these preliminaries had been completed the actions of various stimuli were investigated. In the first place respiration was suspended. After the suspension had lasted about ten seconds active contractions were excited, which commenced in the regions of the tubes and horns of the uterus and then spread over the whole organ. On restoration of the breathing these contractions ceased immediately and the uterus became motionless.

On compression on the abdominal aorta, respiration being kept up, contractions of the uterus came on after one hundred seconds, or towards the end of the second minute; on combining aortic compression with suspension of respiration, the contractions came on at the end of ten seconds, as occurred with suspension of the respiration alone. The influence of anæmia was then investigated in producing hæmorrhage, by opening the carotid artery. This experiment gave a similar result to that of aortic compression. From these investigations it resulted that the circulation and the quality of the blood exerted less influence on the contractions of the uterus than suspension of respiration. There was a difference, however, when the flow of blood to the

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* Communicated to the Gesellschaft der Aertze, Vienna.

brain and central nervous system had been interrupted by compression of the cerebral arteries. Then the uterine contractions came on in the course of a few seconds. It was clear that this centrum exerts the most important influence upon the uterine contraction, and an influence which prevails even where the circulation in the uterus is not disturbed. Finally, in order to confirm the conclusion as to this influence, the cervical portion of the cord was divided between the atlas and axis.

From this experiment it was learnt that the influence of the brain, which had previously been so evidently active, ceased to be so immediately after the section. From this experiment it was concluded that stimulus proceeds directly from the centrum, and not indirectly through the vagus or sympathetic.

It still remains to be found out in what part of the brain the centrum of this reflex action exists. It probably exists in the medulla oblongata, where, according to the universal consent of physiologists, the vaso-motor centrum is to be found.

Art. 222.—*On the Use of the Bowl during Delivery.**

By J. Matthews Duncan, M.D.

(*Edinburgh Medical Journal*, June.)

The practice which Dr. Duncan wishes in this paper to insist upon appears to him valuable and highly important. A bowl, to be kept adpressed to the hips if the woman lies on her back, to the upper and posterior part of the thigh if she lies on her side, in order to catch discharge of any kind which may come from the vulva.

Such a bowl the author has used for many years in his ordinary management of labour, and he has so high an opinion of its utility that he now describes it and its application.

The bowl may be made specially for the purpose; or an ordinary small wash-hand or sponge-basin, or a kitchen bowl, may be used. The last is not so good as the others, as such are generally too deep, and not wide enough. The edge of the bowl touching the soft parts should be without sharpness, and smooth or flat. The bowl should be capable of containing two pints. It is advantageous to have two of them at hand, the one replacing the other when full.

Such a bowl is used at any or at all times during the various stages of labour—to receive accidental or unavoidable hæmorrhage; to receive liquor amnii gushing away or more slowly draining; to receive the liquor amnii discharged after the birth of the child; to receive the placenta; to receive post-partum hæmorrhage.

The ordinary method of conducting labour is to receive all such discharges in cloths—a method which the author regards as very objectionable, and this character of it is demonstrated by the following arguments.

The bowl is preferable to the use of cloths because it is a cleaner

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* Read before the Obstetrical Society of Edinburgh, 10th April.

plan. This advantage requires no proof, for it is plain that receiving discharges in an earthenware vessel, and removing them in it from the bed of the lying-in woman, must be incomparably cleaner than allowing them to run into and soak cloths, and soil the bed-linen and the clothes and person of the patient.

The bowl is preferable to the use of cloths because it is less expensive. The quantity of cloths frequently required when a bowl is not used is very great. In questions of practice, such as that now under discussion, it is chiefly the circumstances of the poor that have to be considered; and it is impossible for a poor household, or one of moderate means, to provide the quantity of cloths necessary for the proper management of a labour. In proportion as the quantity of cloths required is great in these circumstances, so also is great the mismanagement of the case; the mismanagement resulting not only in want of comfort, but also in disease and death. The poor form the great majority of our patients, and cannot afford money to provide a supply of cloths adequate to the requirements of an ordinary labour. The use of the bowl diminishes, to a very large extent, the quantity of cloths used.

The use of the bowl is preferable to the use of cloths because it promotes the salubrity of the surroundings of the patient by keeping off injurious damp and cold. Dampness and coldness go very much together in the circumstances under consideration. Both are not merely destructive of comfort, but are injurious, as promoting disease directly and indirectly. The evil may be incurred directly, for every one knows the dangerous action of cold during and after delivery. Now-a-days, with our better though lamentably imperfect knowledge of the diseases called collectively puerperal fever, we are not disposed to ascribe so much evil to cold as was formerly done, but there can be no doubt of its injurious potency. In the times referred to flourished the great William Hunter, and it is well known that he regarded injudicious exposure to cold as the chief cause of the disasters which befall women in childbed. But dampness may be very injurious in other ways, for it encourages decomposition and putrefaction. Liquor amnii, blood, meconium, are full of or composed of materials which are ready to decay or putrefy; whose incomplete removal, therefore, from the bed of the lying-in woman will lead to her being enveloped in an atmosphere full of noxious germs and other baneful products of decomposing animal matters. The use of the bowl facilitates the complete removal of everything that is damp about the newly-confined woman.

The use of the bowl is preferable to the use of cloths, because it enables the practitioner to form a better judgment of the quality and quantity of discharges. This is evident enough at once. But the very great advantage of knowing accurately the quantity of blood discharged in cases of hæmorrhage is too important to be passed over without being insisted on. Nothing can exceed the vagueness of the ideas of practitioners in most cases as to the quantity of blood lost; and while it is, no doubt, supremely important to judge of the graveness of a flooding not merely by the quantity discharged, but by the effects of the loss on the constitution, as indicated by the symptoms, yet there can be no doubt of the very great value of information as to quantity in every case. In many cases indeed, such as those where constitutional symp-

toms are slight or absent, the ascertainment of quantity exactly is of primary importance, but ordinarily it is not so.

On these grounds Dr. Duncan strongly recommends the use of the bowl in the conduct of every case of labour. Restlessness on the part of the patient may diminish, nothing can destroy, its utility.

It is well known that the use of the bowl in cases of recent confinement has been recommended, and especially in cases of post-partum hæmorrhage, with objects in view quite different from those simple and homely uses which alone are the subject of this paper.

Art. 223.—*Treatment of Rigidity of the Os Uteri.*

By A. B. Isham, M.D.

(*American Journal of the Medical Sciences*, October, 1871.)

In speaking of the therapeutical means upon which we may most confidently rely as safe, reliable, and entirely suited to the ends to be accomplished, Dr. Isham, for purposes of convenience, divides them into four classes:—

1. Those which may assist the inherent expansile power of the os.
2. Those which may bring about dilatation by pressure.
3. Those which may aid dilatation by producing muscular traction upon the os.
4. Those which may combine the aid of all the factors engaged in dilatation.

Therapeutic Agents of the First Class.—A continuous current of water, either warm or cold, applied separately or alternately, is an efficient means of producing an expansion of the os. It acts directly as an excitant of the circular fibres of the os and cervix, and it undoubtedly also secondarily brings into action the other forces of dilatation.

Barnes' water bag is a mechanical agent of great value, operating in the same way as the water current, with the additional power of expanding pressure applied equally to all parts of the os.

The electro-galvanic current passed over the os furnishes another powerful stimulus to the nervi-motor function, acting remotely in the same way as the other remedies of this class.

Agents of the Second Class.—External pressure upon the abdominal walls over the uterus, if well applied, supplies a power lacking in the uterine muscles, forcing down the contents of the womb against the os and substituting an artificial pressure of considerable power for the natural one.

Forceps may be called to aid if there is sufficient dilatation for their introduction. They afford a mighty power in traction, supplying from without the force wanting within, and producing gradual dilatation over them.

Agents of the Third Class.—Chloroform has the weight of high authority as being one of the first therapeutical agents, administered by inhalation in the treatment of complicated labour. Carried to full

anæsthesia it perfectly relaxes every tissue in the whole system, and its efficiency in relieving spasm is manifest. It would thus enable the os uteri to be dilated by mechanical means, supplanting the place of all the natural forces of dilatation, and rendering delivery possible by instrumental aid. It has also another property, that of putting in abeyance the cerebro-spinal nervous sense, thereby undoing spasmodic action, while the play of muscular force may continue in operation. In this way it is a useful means of overcoming antagonism of uterine muscles. That chloroform is not applicable to debilitated subjects is apparent.

Sulphuric ether has properties analogous to chloroform, but it is considered by many to be the less hazardous remedy. They are both agents not to be trifled with, for, carried too far, they may produce paralysis of the heart or respiratory apparatus.

Hydrate of Chloral is a grand addendum to our therapeutic means. By its contact with the alkalies in the blood the chloroform is liberated. In doses of x grs. to ʒss. repeated, if necessary, it quiets spasmodic action, restores balance to muscular effort, gives ease and sleep to the patient, while it in no way interferes with the natural play of the uterine muscles—labour quietly proceeding under its influence. It is easier of administration than chloroform or sulphuric ether, much safer, and in most cases as efficient. Where there is a great gastric irritability, its use would seem to be contra-indicated.

Hypodermic injections of morphia have a speedy and reliable influence in suspending spasm and contraction of uterine muscles. They put a lock upon muscular action by rendering unconscious the muscular nervous sense, and thereby enable the muscles to recuperate their wasted energies. Morphia may be given *per orem* for the same purpose; but where speedy action is desired, or where there is gastric disturbance, the hypodermic method is preferable.

Opium has the same action as its alkaloid, morphia, but the latter is preferable on account of its smaller dose, and its more certain and speedy action.

Agents of the Fourth Class.—Rupture of the membranes, where there is a deficiency of pressure against the os, constitutes a measure of great value—it enables the presenting part to engage advantageously, and furnishes leverage to bring into play the third factor of dilatation. This means may also operate upon the inherent expansile power of the muscles of the cervix by letting down the presenting part against it to produce excitation of the nervi-motor function.

Stimulants and tonics, which, through the blood, give tone and vigour to all parts of the system, as alcoholic liquors, extract of meat, ammonia, quinia, and strychnia (operating through the spinal nervous system), are all invaluable remedies in inertia uteri. They give new life to the dormant muscles, and enable them to make the traction needed, to produce pressure, and to stimulate the nervous influence—all the factors in the process of dilatation.

Galvanism has been alluded to as an agent of the first class. By its action upon the nervous influence it may combine all the agencies entering into the expansion of the os uteri. The current should be applied by one pole to the external surface of the os, while the other is

placed over the abdomen in front of the uterus, and gradually swept around to the spine, over the sacrum and lumbar vertebræ.

Ergot of rye has a well-settled power of stimulating uterine contractions. Its mode of action, after much discussion, is not well ascertained. It may be administered by the mouth in any of the several ways in which it is prepared.

Tartar emetic, given in minute doses, often exerts a beneficial effect in relaxing rigidity of the os. Its physiological properties in this connexion are not well understood.

Art. 224.—*On Œdematous Elongation and Prolapsus of the Neck of the Uterus during Pregnancy and Labour.**

By Dr. Gueniot.

(*Gazette Hebdomadaire*, No. 2, 1872.)

1. In some females there exists during pregnancy and ocasionally at the time of delivery a special affection of the neck of the womb which, almost always overlooked, has not hitherto been the subject of any description.

2. This affection may be described under the title of œdematous elongation, with prolapsus of the uterine neck, which indicates the principal constituent lesions.

Hyperæmia and turgescence of the organ, the transformation of its cavity into a long and freely patent canal, the rapidity with which these symptoms usually disappear, and the readiness with which they are reproduced under certain circumstances, represent other fundamental characters of the affection.

Ulceration of the os tincæ, prolapse of the vagina, thinning and flaccidity of the uterine walls, are likewise almost constant symptoms, as are also peri-pelvic pains, a feeling of general debility, and variable disturbance in micturition.

3. The causes of this morbid change of the neck of the uterus are complex; they are derived from certain anatomical dispositions of the organ, and from various circumstances which exercise over it a prolonged mechanical action.

4. Although a very rare affection, œdematous elongation with prolapse of the neck is without doubt less exceptional than has generally been supposed. Many observers have wrongly confounded it with hypertrophic elongation or with simple prolapse, to which indeed it presents a great analogy, but from which it is essentially distinguished by special characters of the first importance.

5. The affection in question is to the patient a source of pain and inconvenience rather than of threatened danger, but it is dangerous to the infant, whose health and life it compromises by its predisposition to premature labour or to abortion.

6. The fitting treatment for this affection consists in returning the

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* Communicated to the Académie de Médecine.

prolapsed neck and in keeping it in place by means of a plug and bandage applied to the vulva. The administration of sedatives to relieve cough and of laxatives to avoid constipation are necessary auxiliary means. As the employment of pessaries is very dangerous during pregnancy, these instruments ought to be strictly proscribed, and likewise any operative proceeding which would affect the vagina or neck of the womb.

7. During labour the woman should be well watched, and care taken to prevent accidents. Finally, after delivery, the medical attendant should reduce the prolapsus, and advise a subsequent exceptionally prolonged decubitus.

Art. 225.—*Report of a Case of Ventral Pregnancy.*

By Alfred Meadows, M.D.

(*Medical Times and Gazette*, January 6.)

At a meeting of the Obstetrical Society of London on December 6th, Dr. Alfred Meadows related a case of so-called ventral or abdominal pregnancy. The patient was aged twenty-two, and was admitted under his care into the Hospital for Women, suffering from what had been previously diagnosed as extra-uterine gestation. The abdomen was enlarged to at least the size of pregnancy at full term, though she had only arrived at about the sixth and a half month. The fœtal heart could be heard. At the end of a week symptoms of collapse supervened from internal hæmorrhage, and the patient died. The fœtus was found free in the abdominal cavity, its only attachment being by the umbilical cord to a kind of placental mass formed at the fimbriated extremity of the Fallopian tube. Dr. Meadows advocated a more frequent resort to gastrotomy in such cases, not so much with a view of saving the child or of rescuing the patient when collapse had supervened, but in order to anticipate that collapse, and, in fact, to remove the growth as soon as we could arrive at a true diagnosis. He intimated that possibly, in cases such as the one he related, and perhaps in certain others, it might not be necessary to remove the placental mass, as this might gradually be absorbed by a slow physiological atrophy after that for which it existed was removed.

Dr. Protheroe Smith said there was no doubt in his mind about the propriety of performing gastrotomy in such cases, but a difficulty suggested itself in the previous diagnosis. Seeing that almost always cases of extra-uterine fœtation were fatal, he thought that even in the tubular form, if we could but improve our diagnosis so as to detect tubular pregnancy in its early stage, any operative interference which would afford the remotest prospect of life to the mother should be regarded as a duty.

Dr. Graily Hewitt believed that the operation of opening the abdomen ought to be performed when hæmorrhage from rupture of an extra-uterine pregnancy threatened to be fatal; but the great difficulty was the diagnosis. With reference to Dr. Meadows' proposal to treat such cases, apart from hæmorrhage, by such an operation, that was another matter, and, in considering it, it should be borne in mind that a certain

proportion of supposed Fallopian pregnancies, as stated by Kussmaul, were really cases of pregnancy in a bicorned uterus, and such cases often did well if left to themselves.

Mr. Spencer Wells said that the propriety of operating when a woman was dying of bleeding into the peritoneal cavity, or of operating when her life was not in immediate danger although extra-uterine fœtation had been ascertained to exist, were very different questions. In the one case it might be the clear duty of the surgeon to try and save a patient at any risk from inevitable death; in the other case he would give full weight to the consideration that a spontaneous termination of extra-uterine fœtation was not very uncommon. The structure might remain in the body harmless for many years, or pass away through the rectum, the vagina, or the abdominal wall. In a case reported by him the sac could not have been separated, though it would have been easy to remove the fœtus and treat the sac by drainage.

Dr. Greenhalgh gave brief particulars of seven cases of extra-uterine fœtation; three recoveries and four deaths. Of the former, in one the fœtal bones were discharged through an abscess in the left groin, in another a full-grown fœtus in an advanced stage of decomposition was extracted through an incision in the roof of the vagina, and in the third the liquor amnii was drawn off by a small trocar and canula. Dr. Greenhalgh said that, owing to the great fatality in such cases, he was of opinion that gastrotomy, as recommended by Dr. Meadows, might in many cases give the patient a better chance than by permitting the development of the fœtus and secundines to progress, leading to the risk of rupture and probably fatal internal hæmorrhage or other grave termination.

The President, Dr. Braxton Hicks, said his opinion, based on many cases, was that a number recovered from severe internal hæmorrhage, while a greater number gave no serious anxiety to the patient or medical attendant. If, then, these cases were not so fatal, he should prefer not to interfere till urgent symptoms arose. But, generally, we do not see the patient or recognise the condition till serious symptoms arise, and then the patient is in such jeopardy that we feel afraid lest, by so serious an operation, we should take away the chance of life, which even then may be reckoned upon; so that practically the opportunity for such an operation as that suggested seldom presented itself. If any one would look over the records of cases in the Society's *Transactions*, he would see the exceeding difficulty which would have attended the removal by gastrotomy—adhesions in all directions, enlargement of the vascular system into sinuses, the hæmorrhage resulting from the rupture of which would be excessively difficult to stop.

Art. 226.—*On the Anatomy of the Human Placenta.*

By J. Braxton Hicks, M.D., F.R.S.

(*The Lancet*, May 18.)

At a Meeting of the Obstetrical Society on May 1st, an abstract of a paper by the President, Dr. Braxton Hicks, on the anatomy of the

human placenta, was read. The paper began by discussing the foundation of the sinus system, as first propounded by John Hunter. It was shown how the injection he used would almost certainly produce an irruption of blood amongst the villi. The walls of the dilated vessels as they ramify in the decidua serotina on its inner or ovular surface, are so very delicate that the force of the syringe, so unlike the action of nature, is nearly certain to break them down. A description of the arrangement and condition of the vessels formed a subsequent portion of the paper. The evidence of Goodsir and other observers was then reviewed. The second part of the paper proceeded to discuss the fact that blood being found amongst the villi after natural expulsion was no evidence in favour of or against a sinus system, because in the vast majority of placentæ naturally shed there are lacerations and denudations of the decidua serotina, which would admit blood into the so-called cavity of the placenta. The author then argued that the placenta being examined *in situ* without any injury whatever, if no blood be found among the villi, this was conclusive against the existence of a sinus system. Dissection of four specimens was given. In two not a trace of blood was found, in the other there was a trace ; in one of these the origin was clearly traced to a small clot extravasated among the villi, in the other to a laceration of the villi themselves. Further evidence was added, derived from three placentæ called "fatty;" in these although the decidual vessels were highly distended with blood, yet the intervillal space was absolutely free. Dissections of ova were given to show that at no time of pregnancy is there a trace of a transition state, which is assumed by some authors. The openings of the uterine glands can be observed to full term, no membrane passing over them on the ovular aspect of the decidua serotina, and the opaque tips of the villi are traceable without any membrane over them till full term. The author quoted also the behaviour of hæmorrhage, for if the placental cavity were fed necessarily by blood from the mother's vessels, then any rupture into its cavity ought to be attended by severe and continuous loss, which is contrary to fact. A sinus system is proved by extra-uterine fœtation not to be a necessity. In the uterus the existence of decidual processes with large sinuses in them brings the blood halfway through the placental thickness, and the peristaltic movements of the uterus would doubtless facilitate the exchange of elements.

Art. 227.—*Report of a Case of Sudden Death some time after Delivery.*

By John Ringland, M.D.

(*British Medical Journal*, May 18.)

At a meeting of the Dublin Obstetrical Society, on March 16th, Dr. Ringland detailed a case of sudden death seventeen days after delivery, apparently due to embolism of the pulmonary artery. The patient, aged twenty-six, and of a leuco-phlegmatic habit, was seen by him three weeks before her confinement. It was her first pregnancy, and through-

out gestation she had apparently been in good health. Her pulse was 100; and at this rate it continued until her confinement on October 1, 1871. She had a very easy labour, without any untoward symptom, but the pulse was 120. The next day the lochia were found to be intolerably offensive. This at once yielded to suitable measures. All went on well until early on the morning of October 18th, when she suddenly complained of severe pain in the calf of her left leg, her mouth twitched, frothy saliva was ejected, and in a few minutes she was dead. A post-mortem examination was made by Dr. Mapother fifty-eight hours afterwards. The lungs, especially the right, were extensively adherent to the costal pleuræ; the upper lobe of the right lung was diseased. The heart was small, soft, and flabby, with much fat deposited externally. The pulmonary artery and its two branches were filled with a large though soft clot. The liver and spleen were congested, softened, and friable. The cavity of the uterus was dilated, so as to contain a closed hand, and its walls were so thin as almost to resemble the urinary bladder. Notwithstanding the excessive thinness of the uterine wall, that viscus had performed its part without yielding. Had operative interference been necessary during labour, rupture of the uterus would probably have taken place. The absence of all symptoms, with the existence of a large amount of visceral disease, was also a remarkable trait in the case; the permanently rapid pulse being the only apparent departure from health.—The President referred to the serious position in which a medical man was placed under circumstances similar to those described by Dr. Ringland. He had been struck with the rapid decomposition which the body had undergone, and with the extreme attenuation of the uterine walls. Dr. Playfair had stated that true embolism never occurred before the nineteenth day after delivery. A thrombus might form at an earlier period; and the case reported by Dr. Ringland might have been one of thrombus rather than of embolon, the formation of the clot being favoured by a weakened state of the heart.—Dr. Churchill gave details of two cases of sudden death after parturition. One lady had made an excellent recovery, and had dressed to go down stairs. She sat down to pass urine, when, with a loud cry, she fell forward dead. This was probably a case of embolism. In a second instance of sudden death, a lady was found by him three hours after her first delivery, with the face livid, the lips purplish, and in a dying state. Death was perhaps due to what he would call *cardiac paralysis*.—Dr. H. Kennedy believed that in Dr. Ringland's case fatty heart and not embolism was the immediate cause of death. The fœtid character of the lochia, the patient's habit, and the early setting in of decomposition, all pointed to fatty degeneration of the heart, as did also the permanently rapid state of the pulse for some time before death. Chloroform might certainly have proved fatal if used under such circumstances.—Dr. Atthill regarded the formation of a coagulum as the immediate cause of death in the case described in the paper. This thrombus, not an embolon, might form in consequence of the weakened state of the circulation dependent upon a fatty heart. He quoted a somewhat similar instance, in which a lady recovered from several syncopal attacks.

(B) CONCERNING THE DISEASES OF WOMEN.

ART. 228.—*Cases of Inter-Menstrual or Intermediate Dysmenorrhœa.**

By WILLIAM O. PRIESTLEY, M.D., Professor of Obstetric Medicine in King's College.

(*The Lancet*, December 9, 1871.)

The author pointed out that, although much had been written concerning dysmenorrhœa, and several forms of it had been described in accordance with the pathological views taken of its causes, the description of the several varieties was ordinarily limited to the time of the catamenial period, with the two or three days additional which may precede and follow the menstrual flow. From time to time, however, cases of a more obscure kind presented themselves, in which the chief suffering is remote from the actual menstrual period, but comes on, nevertheless, with the same punctuality, and is probably dependent on organic changes associated with the production of the catamenia. Probably other practitioners had observed like instances, as they were not unfrequent, but as the author had met with no description of them, he brought the subject before the Society as a fragmentary contribution to the pathology of uterine affections, which might possibly evoke further elucidation by discussion.

In all the cases detailed severe pain was experienced by the patients midway in the menstrual interval. The pain commonly came on about fourteen days after a catamenial period, and, after lasting a variable number of days, ceased before the supervention of the next expected period. In one case, the pain, beginning midway in the interval, ran into the following monthly period, and was relieved by its flow. The suffering was constantly referred to one or other ovarian region, and in three cases out of four marked tumour, or thickening from old adhesions, was found in that locality.

The reason for the occurrence of pain in the inter-menstrual period, and with such regularity, was not, in the present condition of our knowledge, perfectly obvious. A study of the physiological and pathological conditions left little doubt, however, that it was due to perturbations in the function of "spontaneous ovulation" habitually going on in the ovary. Hypertrophy of the structure of the ovary, or thickening of its indusium, would lead to undue vascular excitement, and impede the advance of ova to the surface in their attempts to attain maturity. It was not unreasonable to suppose, from all the known facts of the case, that preparation for an approaching period began in the ovary ten or fourteen days before the occurrence of the monthly uterine discharge; and if the initial steps in the process of ovulation were opposed by certain pathological conditions, pain would ensue. Nay, in the absence of distinct organic change, it might readily be imagined how special irritability in the ovary would cause an unusual amount of disturbance

* Read at a Meeting of the Royal Medical and Chirurgical Society, November 28.

whenever there was occasion for the exercise of fresh activity in the organ. This latter class of cases would partake more or less of a neuralgic character.

The treatment would depend on the pathological condition as ascertained by examination. The pain being only a symptom, it would be needful to inquire into the cause; and if there were tumour, or thickening depending on former inflammation, absorbent remedies would be indicated. If no organic change of structure could be detected, anti-neuralgic remedies, such as quinine, iron, and arsenic, would best answer the purpose of cure.

Art. 229.—*On the Essential Cause of Dysmenorrhœa, as illustrated by Cases of Menstrual Retention.**

By Robert Barnes, M.D., F.R.C.P.

(*Medical Times and Gazette*, April 27.)

The author sought, by comparison of different cases of dysmenorrhœa, to discover a common essential cause. Having discussed the question of "irritable uterus," and adverted to the evidence accumulated since the time of Gooch and Ferguson in proof that cases of neuralgic and constitutional dysmenorrhœa were being gradually transposed under closer clinical analysis to the class of obstructive dysmenorrhœa, the author stated the proposition that the essential condition of a large proportion of cases of dysmenorrhœa was really retention of menstrual fluid. He illustrated this by several cases typical of various kinds of obstruction, and especially by some of congenital or acquired stenosis and atresia of the genital canal. For example, one was that of a healthy woman who never suffered dysmenorrhœa until after a severe labour, which was followed by sloughing of the vagina and gradual atresia by cicatricial contraction; as the constriction advanced dysmenorrhœa became more and more severe, until, the vagina being completely obliterated, the phenomena of complete retention ensued. When the vagina was restored by operation, the dysmenorrhœa was cured. So in cases of imperforate hymen, there was dysmenorrhœa from retention. Some points in the history of this affection were discussed. The term "amenorrhœa," usually applied, was bad; menstruation went on, it was occult and painful. The sources of danger and the modes of operating were considered. The cases of dysmenorrhœa from flexion and from stenosis of the os internum and os externum uteri were compared with those of complete atresia of the vagina, the common condition being in all retention of menstrual fluid. Other illustrations were adduced to show that retained fluid or clots in utero caused symptoms similar to those of dysmenorrhœa. The effect of stenosis and atresia in producing retrograde or ascending dilatation of the genital canal was shown, and the mechanism by which retained or injected fluids found their way through the tubes was attributed to the contractile efforts of the uterus excited by the pressure of the retained fluids. One condition submitted was that, if the most common essen-

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* Read at a Meeting of the Obstetrical Society of London, April 3rd.

tial condition of dysmenorrhœa was retention of menstrual fluid, search must be made for the cause of the retention in order to remove it. This conclusion was as logical as the necessity always recognised of giving exit to the menstrual accumulation in cases of complete retention from imperforate hymen. Dysmenorrhœa was incomplete retention. The indication was the same, only less imperative.

Art. 230.—*Mechanical Dysmenorrhœa and Chronic Endometritis.*

By Alfred Hall, M.D., Brighton.

(*British Medical Journal*, Dec. 9, 1871.)

In the following case, mechanical dysmenorrhœa and chronic endometritis were cured by dilatation with laminaria-tents and the application of a solution of nitrate of silver to the uterine cavity, the result being remarkable fecundity. The patient was thirty-four years of age, well formed, and healthy-looking. Her case was characterized by a history of long continued menstrual trouble, dating from the first catamenial epoch—pain in the left hypochondrium, symptoms of spinal irritation, hysteria, and dyspepsia. The menstrual flow usually lasted seven or eight days, but brought no relief to the pain. Marriage in 1867 brought no change: on the contrary, an attack of menorrhagia aggravated her condition. The lips of the os being found excoriated, and the cervix congested, blood was taken by puncture, and nitrate of silver applied, but without much benefit. Finding considerable contraction in the cervical canal and os internum, it was dilated with laminaria-tents, of which two were used, at an interval of ten days; and a solution of nitrate of silver (two scruples to an ounce) was applied twice a week to the interior of the uterus. Marked benefit ensued. The next three catamenial periods passed off without any suffering. Pregnancy then occurred, and she was delivered of a full-grown female child at term; which, however, she could not suckle. After passing two more periods naturally, pregnancy again occurred. She went the full time, and was delivered of another healthy infant. This she was also unable to suckle. For the third time pregnancy ensued at the end of three months from her last labour. She went the full time as before, and on this occasion gave birth to three female children, all well formed and healthy. She was unable to suckle them. Two died within the month, and the third is now in a state of slow decline. Thus this poor woman gave birth to five full-grown infants in the short period of one year and ten months.

Art. 231.—*Menstrual Pelvi-Peritonitis.*

By Theophilus Parvin, M.D.

(*American Practitioner*, Dec. 1871.)

Dr. Theophilus Parvin relates two interesting cases of this disease, and adds the following remarks on its diagnosis and therapeutics:—

"The *diagnosis* of menstrual pelvi-peritonitis will depend, in the first place, upon some obvious menstrual disorder. This disorder existing, we determine simply the etiology of the affection, and further investigations will be into the symptoms of the inflammatory affection in general. *Pain* is the most salient phenomenon of peritonitis. 'This cry of alarm' is in serous membranes highly characteristic.

"A patient with pleuritis describes his sufferings as if a sharp knife were thrust into his side. He hesitates to move, to cough, to take a full inspiration, to do anything which will put the intercostal muscles of the affected side in action. So, too, a woman with pelvi-peritonitis will complain of a pain similarly intense and sharp. Instinct insists not only upon general rest, but also upon local rest, and she lies down on her back, with the limbs drawn up, to relax the abdominal muscles. The pain is in the hypogastric, or in one or both iliac regions, or in all three, and often irradiates over the abdomen, or extends down the inner and upper portion of one or both limbs. Conjoined with pain are tenderness on pressure, and a sensation of fulness or distension in the lower part of the abdomen. Often there is great irritability of the bladder, and micturition is not only frequent, but difficult and painful. Comparatively seldom the rectum is disturbed; though later on in the disease, if the tumour formed should be retro-uterine, it may be very irritable. Nausea and vomiting quite commonly mark the onset of the disease; and as the latter is frequently of 'bilious' matter, and as there may be pain in the right side extending to the liver, and as there is fever, often preceded by a slight chill or chilliness, the disorder is at first sometimes mistaken in malarial regions for an attack of remittent fever.

"The formation of a tumour or tumours in one or more of the vaginal cul-de-sacs is a marked characteristic of this form of inflammation. The tumour may generally be found within a week after the onset of the disease, and before this the sac which is to be invaded by this swelling will be more sensitive to pressure, and less elastic than natural. 'This sensation of a tumour, which is recognised in one or more of the vaginal cul-de-sacs, is so much more interesting to study, as this sign in pelvi-peritonitis is the analogue of the dulness, or rather the analogue of the deficiency of elasticity on percussion which is found in pleurisy, and as the dulness furnishes one of the most important elements of diagnosis. . . . . The tumour is in juxtaposition to the uterus, not part of it, and thus is distinguished from enlargements, partial or general, which that organ may have. It is separated from it by a furrow or sulcus, sometimes very distinct, at others slight; and then it is by the difference of level, of consistence, and of elasticity, and by its special configuration, that it is to be distinguished.' (Bernutz.)

"Another point to be observed in making a diagnosis is the appreciation of 'the displacements, versions or flexions, and rotations which the uterus has undergone,' consequent upon the tumour or tumours encroaching upon its normal position, or, further on in the progress of the disease, from inflammatory adhesions.

"Finally, not to prolong the consideration of this topic, an exacerbation of inflammation, a '*recrudescence*,' is no uncommon event in pelvi-peritonitis at the accession of the usual monthly periods, especially if the menstrual flow either fails to appear or is scanty.

"In the therapeutics of this disorder few remedies are required, yet these used intelligently are wonderfully efficient. The first of these I would mention is local depletion by leeches. Where it is possible, the leeches should be applied directly to the neck of the womb; but when the vagina is so swollen or sensitive that a speculum cannot well be introduced, then their application should be made to the lower part of the abdomen, and at least three times as many should be used; for Bernutz justly observes that four leeches to the cervix accomplish more in depleting the inflamed part than a dozen used externally. The leeching may be repeated on the second and on the third day, if there has been no material improvement in the disease. About the third or fourth day a large camphorated blister,* occupying at least a third more than the sensitive portion of the abdomen, will be found useful if the symptoms are not yielding readily to the previous depletion. Internally, no remedy is so important as opium. Indeed, many cases of pelvi-peritonitis will make good recoveries under it alone. I am in the habit of giving the opium, in combination with quinia and the extract of conium, in the proportions previously mentioned. No one need withhold it for fear of constipating the bowels. This should be desired rather than feared. There are no 'peccant humours' to be purged away, and *rest* for the whole body, the intestinal canal included, is a most important element in the successful treatment of the disease. Once in four or five days is often enough for an evacuation from the bowels; and when this does not occur spontaneously, a copious injection of warm water, especially when thrown high up in the bowel by means of a long tube, will generally have the desired effect. If any laxative is administered by the mouth, it should be one of the milder salines, and then only as an efficient preparation for the better action of the enema, which should succeed it in three or four hours. At the approach of a monthly period efforts should be made to seeure a free discharge. These failing, when the menstrual *molimen* is manifest, two or three leeches to the neck of the womb will be of great advantage.

"Warm hip-baths, after the acute stage of the disease has passed, are often exceedingly agreeable to the patient, and are of some value in lessening the long-lingering soreness in the lower part of the abdomen.

"Of course, too, once this acute stage is passed, the practitioner will give suitable attention to any condition of the womb which may have been the cause of the menstrual disorder. An endo-metritis, a flexion, narrowing of the cervical canal, &c., may require to be cured before the patient can be assured against similar attacks at other monthly periods.

"It is important that the patient should be warned against an early resumption of her ordinary avocations. Better too prolonged rest than too early exercise. Probably no well-marked case of pelvi-peritonitis recovers entirely, under the most favourable circumstances, in less than six weeks or two months. The *abdominal corset*, previously mentioned,

* Smaller blisters upon one or the other iliac regions, as may be indicated, the blistered surface being dressed with morphia, will subsequently be found useful to dissipate the cruel neuralgic pains which in many cases are present after all inflammatory symptoms have subsided. So, too, small blisters similarly applied are useful in hastening the resolution of the tumour when this process seems to be slow or arrested.

or some similar bandage, will be found in many cases of great advantage, enabling patients to sit up and walk without discomfort; when not wearing it their suffering would be acute at every movement or jar. Whether, as Bernutz teaches, his bandage *immobilizes* the uterus, or whether it lifts upward and backward the abdominal viscera, so as to prevent so much pressure upon the recently-inflamed pelvic peritoneum, there can be no question as to its great utility.

"It will be observed that in the enumeration of therapeutic agents in this disorder no mention has been made of mercurials. I believe that calomel, or any other mercurial, administered as a cathartic, is decidedly injurious, and that the supposed antiphlogistic action of small doses is unnecessary. Opium is enough."

Art. 232.—*Case of Pelvic Cellulitis followed by Peritonitis.**

By James Young, M.D.

(*Edinburgh Medical Journal*, May.)

In the following case some remarkable changes occurred during the progress of, and subsequent to, the primary inflammatory action which ultimately caused the patient's death. "Mrs. ——, aged thirty-two, was born in Edinburgh, of healthy parents, who lived to an advanced age. She had had six children and several miscarriages during her married life of fifteen years. Mrs. —— was greatly alarmed by fire on the 20th November last, when ten weeks pregnant. Hæmorrhage came on, and continued three weeks, more or less, until the 8th December, when the fœtus was expelled. A medical man was sent for, and attended for a week, after which a change was recommended to the country. While there, considerable hæmorrhage continued for two weeks, requiring tonics and the liberal administration of wine. Notwithstanding the treatment and rest, the hæmorrhage continued until she returned to town, on the 2nd January last. I saw her on the 3rd, and found her very weak, pale, and anæmic. I examined the uterus, and thought there were indications of some placental remnant, which was expelled during the night. The hæmorrhage ceased on the 5th January. She had little, if any, pain until the 7th, when she had a severe rigor—pulse 120, and weak, with diarrhœa. She complained of severe pain in the region of the uterus. Some days thereafter, Prof. Simpson visited her, and confirmed my opinion that the case was one of pelvic cellulitis. A blister was applied above Poupart's ligament, on the right side, and occasional mild purgatives were given; also milk, beef-tea, and moderate doses of brandy. On the 12th, the pain was very great, and, on examination, I discovered an abscess of considerable size forming between the uterus and rectum. I ordered warm-water injections and sponge-piline fomentations over the pubic region, hoping that the abscess might discharge itself per rectum or per vaginam. On the 15th I opened it with the trocar and canula, and removed a saucerful of putrid and most offensive pus. I

* Read at a Meeting of the Obstetrical Society of Edinburgh.

ordered vaginal injections to be continued, and on the 16th Mrs.—— was greatly relieved, which was indicated by her countenance. On the 17th, her reply to my interrogation was, 'Very well.' I prescribed iced champagne, with beef-tea, milk, and white of eggs. To my great dismay she complained of considerable pain over the abdomen on the 19th, and, on examination, I discovered the whole belly to be tympanitic, with tenderness on touch all over. There had been no fresh rigor, which made the extension of the inflammation all the more unaccountable. Turpentine stupes were immediately ordered to be applied at frequent intervals, with small doses of opium, and a due amount of nourishment. Bowels to be gently relieved. On the 20th the pulse rose to 130. Hiccup came on, and vomiting, the stomach showing the signs of irritability usual in such cases; and the patient died on the 21st January.

"I am indebted to my friend Dr. Charles Bell for a copy of his excellent treatise, entitled, 'Constitution of Women, as illustrated by Abdominal Cellulitis,' and I find, on perusal, that the connexion between cellulitis and peritonitis is admirably brought out—see p. 24. Dr. Bell, at p. 26, says: 'It is also a striking characteristic of this disease that it is liable to have sudden and alarming exacerbations, which are attended by an increase of pain and fever, indicating those occasional attacks of peritonitis, which, if not attended to, may prove fatal.' Dr. Bell also, at page 44, refers to occasional attacks of cellulitis coming on after uterine operations, but at that time had only met with two such cases. I have seen several annoying instances where perimetritis followed the use of sponge-tents and pessaries."

Professor Simpson recommended that these abscesses be always opened early, for fear of their rupturing. The difficulty is to determine whether it is a peritonitic or cellulitic abscess.

Art. 233.—*Treatment of Ovaritis.*

By J. Matthews Duncan, M.D.

(*Edinburgh Medical Journal*, September, 1871.)

Dr. J. Matthews Duncan divides ovaritis into acute and chronic. The acute form may end simply by resolution, or its termination may be complicated by perioöphoric adhesions or abscess, or true ovarian abscess, or it may end in the chronic form of the disease. Chronic ovaritis may last for many years without the organ becoming fixed by adhesions, and without suppuration in its substance or in its immediate neighbourhood. One ovary only may be affected, or both sides, and the disease may be limited to one, or attack both alternately. The left ovary, he thinks he has observed, is at least three times its ordinary dimensions. The symptoms cognizable by the practitioner are sensitiveness, tenderness, degrees of hardness, enlargement, roughness of surface, and change of position. Ovaritis is frequently caused by the conditions of recent marriage, or may be produced by suppression of the menses from cold or other causes; it is often observed as a consequence of gonorrhœa; it occurs frequently during convalescence from abortion.

It is less common after delivery at the full time. It is observed frequently after operations on the uterus, such as metrotomy and other dilatations of the cervix, and it is frequently found in cases where no evident cause can be assigned to it. Ovaritis occasions pain, which may be either slight or severe, acute or dull, in the region of the ovary, groins, back, sacrum, or down the thighs. It is not necessarily accompanied by suppression, or even any diminution, of the lochia or of the catamenial flow, nor by menorrhagia, though these symptoms may occur. Dr. Duncan does not believe that ovaritis is inconsistent with fertility, though it no doubt is a frequent cause of sterility. A woman suffering from ovaritis, acute or chronic, can rarely submit to sexual connection, on account of the pain it inflicts. Patients suffering from ovaritis often quickly assume evident outward appearances of depraved health, the dull eye, the pasty face, pallor, and anæmic look. Ovaritis is only to be made out exactly by a physical examination, the details of which are fully given in Dr. Duncan's paper. The prognosis should always be very guarded; for although many cases mend rapidly, many are very tedious. In the treatment the invaluable condition of rest of the affected organ cannot be maintained, the ovarian congestion attendant upon the maturation and bursting of a Graafian follicle coming to undo all that treatment may have effected. In chronic cases two, three, or four leeches may be applied through a glass speculum to the cervix uteri, and the bleeding from the leech-bites encouraged, if need be, by hot fomentation to the vulva. In some cases it may be preferred to apply a larger number of leeches over the inguinal canal. As in other chronic inflammations, counter-irritation is here often useful. It is best effected by applying the irritant over the inguinal canal adjacent to the affected gland. A small extent of counter-irritation, say about two inches square, is sufficient. It may be produced by a croton-oil liniment or antimonial ointment, or by keeping a blistered surface from healing. Instead of these forms of counter-irritation a seton may be used. The regulation of the bowels is important, and for this purpose the gentle salines are best adapted. Some patients derive advantage from the use of mineral waters, such as those of Kreuznach; others receive benefit from the waters of Homburg or of Kissingen. Iodine, bromine, and mercury may be used with all the care that is exercised in the administration of these remedies; in other chronic inflammations Dr. Duncan does not think the arrestment of leucorrhœa, especially by speculum and caustic, desirable, at least in an early part of the course of a case, and he has little doubt that this kind of treatment is occasionally a cause of ovaritis.

Art. 234.—*Case of Inversion of the Uterus.*

By John Thompson, M.D.

(*British Medical Journal*, Dec. 16, 1871.)

Dr. John Thompson, of Bideford, relates a very interesting case of this. The subject of it was a farmer's wife who had been previously confined five times. There had been some difficulty in all these labours,

either a faulty presentation, or retained placenta, or the birth was premature. In her sixth labour the presentation was natural, she had arrived at full time, and delivery took place in a few hours. After handing the infant to the nurse, Dr. Taylor applied his hand to the abdomen of the mother, but instead of the usual uterine tumour, there was, he says, "a vacuity such as I never before met with. As I had not attempted to withdraw the after-birth, this seemed strange; nevertheless believing that inversion of the uterus only occurred where traction had been exercised on the funis, it did not strike me that it could have happened here. On examining the vagina, I found the placenta, and at once attempted its removal. In a few seconds it came away with an unusual sort of plunge as if a coagulum had emerged with it, and I tried to remove the mass from under the bedclothes to the ordinary receptacle, but found myself hindered by a band which appeared stouter than the ordinary membrane, and which was, in fact, the inverted vagina. Lifting the bedclothes, I was astonished to observe the after-birth and womb both escaped together, the latter completely inverted, and having the placenta partially attached. There was no bleeding, nor had much blood come away with the vagina. Promptly taking off my coat, and baring my arm, I first peeled off the placenta—this was done with great facility. No blood flowed from the uterine surface. Then, taking the uterus in my right hand, I passed it up the vagina, and bending my fist pressed nimbly against the fundus (my left hand meanwhile supporting the abdomen) and in an instant restored its position. My right hand passed into the uterine cavity, where I allowed it to remain till contraction came on, and it was only withdrawn when uterine action became decidedly expulsive. The patient, during this time, experienced no shock in her system; she lost but little blood, and subsequently made as good a recovery as she had done in any former confinement. Since that time she has not been pregnant, though she has had good general health, and looks ruddy, vigorous, and cheerful.

"Two practical views derive support from the facts of this case; the first, that inversion may, and sometimes does, take place without interference on the part of the attendant; the second, that reinversion may be readily effected, if the manipulation be prompt and well directed. Formerly, it seemed to be the opinion of the profession that inversion of the uterus always indicated a faulty interference on the part of the practitioner—perhaps the view now generally held is that this is only the most frequent cause." . . . "The case with which I restored the displacement was the most remarkable feature in the case; it contrasts strikingly with the distressing failures related in the columns of the different medical journals. The reason for this difference seems to me clearly attributable to the fact of my having acted at once. It is noticeable that in nearly every unsuccessful case the accident has occurred for some time before attempts have been made at reduction—in the majority it could not then be remedied. A reason for delay to procure professional assistance is afforded when, as in the instance I have described, the mouth of the uterus contracts over the course of the uterine vessels and prevents hæmorrhage, but it is to be remembered that this is the very case likely to give the most resistance to reduction if delay be allowed."

Art. 235.—*On Retroflexion of the Uterus as a Frequent Cause of Abortion.**

By J. J. Phillips, M.D.

(*Medical Times and Gazette*, March 2.)

The paper commenced by a reference to the subject of retroversion of the gravid uterus so familiar to all obstetrical practitioners, and associated with retention of urine about the third or fourth month of utero-gestation. This complication of pregnancy was well recognised in all the text-books on midwifery, and the influence of this displacement, if persistent, in inducing abortion was noticed by many writers. Dr. Tyler Smith, in a valuable paper on the etiology of retroversion of the gravid womb, had incidentally referred to the great tendency to abortion which existed in such cases. The object of the present paper, however, was to show that in a large number of cases repeated early abortions resulted from a *retroflected* state of the uterus, and that their true nature was very apt to be overlooked, as they were not necessarily accompanied by any severe or well-marked bladder symptoms. The author had made it a practice to ascertain whether any marked disorder of structure or of position of the uterus could be found to exist in cases of repeated abortions, and the result of this had been such as to convince him that, after making due allowance for various constitutional causes, a most important factor in the production of the abortions in many cases was retroflexion of the uterus; and that this should occupy a leading position in an enumeration of the local disorders tending to the premature expulsion of the ovum. He excluded from consideration those cases in which, in addition to the displacement, the uterus was bound down by perimetric adhesions. Various points in the clinical history of these cases were then noticed. Difficult micturition, present in many cases in a greater or less degree, was not a constant symptom. Frequently the uterus was excited to the expulsion of its contents before it had attained such a size as of necessity to interfere mechanically with the passage of the urine. The increased susceptibility of the retroflected pregnant uterus to concussion from sudden movements, the mechanical irritation to which it might be subjected, the straining in micturition and defæcation, and the irritation which the abnormal position of the uterus set up, seemed all to be very efficient exciters of uterine action. Further, the interference with the circulation in cases of retroflection tended to the effusion of blood between the placenta and uterus, and this in its turn excited uterine action, or led to the death of the ovum. Two apparently characteristic cases were then detailed, in which repeated abortions (in one case six successive ones in the third month) had occurred, but in which the recurrence of this accident was prevented in a subsequent pregnancy by simply introducing a Hodge's pessary, and thus maintaining the uterus in a position favourable for its ascent during its growth. The treatment applicable in such cases, both before and after the supervention of preg-

* Read at a Meeting of the Obstetrical Society of London, February 7th.

nancy, was then noticed, and the paper concluded by referring to the influence of retroflexion in causing imperfect deliverance in cases of abortion. Some of the cases which the author had seen of long retention of a portion of the ovum had been cases complicated with retroflexion of the uterus.

ART. 236.—*The Acquired Deformities of the Uterus; their Importance, Effects, and Results. With a Statistical Account of Observations on the Subject at University College Hospital from Aug.* 1865, *to Dec.* 1869.*

By GRAILY HEWITT, M.D., F.R.C.P.

(*British Medical Journal*, April 20.)

The object of the author was to demonstrate by facts and observations the importance of acquired alteration in the *form* of the uterus, as a disease, and to establish for the *acquired deformities* of the uterus a prominent position in uterine pathology. To establish the frequency of acquired deformity of the uterus, the author brought forward statistics of the whole of the practice in the department for diseases of women at University College Hospital during a period of upwards of four years (1865—1869). These statistics, arranged in tabular form, comprised particulars concerning 1205 patients; of whom, 714 were affected with symptoms referable in one way or other to the uterus. Of the 714 patients presenting uterine symptoms, the diagnosis was aided by a physical examination in 624 cases, which were arranged in three classes: First, general, including 65 cases; second, organic, &c., including 182 cases; and third, acquired deformities, or change of position of the uterus, 377. The first class included absence of uterus, &c., 6; amenorrhœa and vicarious menstruation, 9; menorrhagia, 7; periuterine hæmatocele, 11; leucorrhœa, 12; hypertrophy of cervix uteri, 18; climacteric disorder, 2 cases—total 65 cases. The second class included fibroid tumour or polypi, 96; cancer, 54; pelvic cellulitis, 32 cases—total, 182. The third class: flexions, 296 (retroflexions 112, anteflexions 184); prolapsus, 81—total, 377. It was shown that there were very few of those cases presenting uterine symptoms in which the uterus was not affected with a decided change of shape; this change of shape being, in the author's opinion, the underlying and principal element in the cases in question. In the next place the author submitted particulars of each of the 296 flexion cases in a tabular form, comprising the age, condition, and main facts relating to the 296 cases. These cases were then analysed to show the severity of the symptoms and principal effects. The prevalence of *sterility* and the frequency of *abortion* were especially pointed out, and the following results were obtained. Of married there were 235 cases (100 retroflexion, 135 anteflexion). Of the 100 retroflexion cases, 21 were sterile, 12 had no pregnancy, 9 had abortions but no child; of the 135 anteflexion cases, 60 were sterile, 45 had no preg-

* Read at a Meeting of the Royal Medical and Chirurgical Society, March 26.

nancy, 15 had abortions but no child. In reference to the frequency of abortion in the 296 acquired deformity cases, the results were as follows:—Of the 100 retroflexion cases (married), 24 had abortions; total number of abortions was 32; greatest number in one case was 3. Of the 135 anteflexion cases (married), 27 had abortions; total number of abortions was upwards of 54; and the greatest number in one case was 9. Dysmenorrhœa was almost constantly present in these 296 cases of acquired deformity. Menorrhagia was very common. Chronic uterine inflammation was also common, but was evidently secondary to the alteration in shape. When miscarriages were observed, and retention of portions of the ovum occurred, such retention was very generally traced to the existence of flexion. The *varieties* of acquired uterine deformity were then described as referable to two principal causes—bending of the uterus forwards or backwards. The importance of the varying conditions of the uterine walls in regard to density, consistence, and thickness was next indicated; the connexion subsisting between these alterations in shape and the occurrence of prolapsus pointed out. The very important effects on the circulation in the uterus and on the nervous relations and susceptibilities of the organ were also indicated. Together with the paper a series of nearly 100 outline drawings, exhibiting pictorially the diagnosis made at the time of the examination, was laid before the meeting.

Dr. Routh regarded Dr. Hewitt's tables as giving a good idea of the frequency of uterine disease; but he objected to the statement that retroflexion and anteflexion were in most cases the cause of dysmenorrhœa. Dr. Hewitt had overlooked the fact that, in unmarried females, the uterus was very commonly anteflexed, but recovered its position without trouble. He believed that the number of cases in which dysmenorrhœa was due to anteflexion was very small in comparison with those in which it was not so. The author of the paper had not distinguished between congenital and acquired uterine displacement. As a rule, congenital retroflexion or anteflexion presented no symptoms, and was only found out by accident; and many of the acquired cases gave no symptoms until the fundus uteri became affected. In Dr. Hewitt's drawings it was the fundus that was shown to be congested or inflamed. Why did some of the women referred to in Dr. Hewitt's statistics become pregnant, and others not? He believed that the reason was, that in some cases of retroflexion the os uteri was turned upwards, so that semen could not enter. This condition was to be remedied by relieving the uterine congestion by antiphlogistic means. He believed that most of the cases of so-called prolapsus were in reality examples of the elongation of the cervix described by Huguier. Dr. Graily Hewitt, in reply, said that he was quite aware that some degree of anteflexion was common before menstruation; but displacement was not natural after menstruation in healthy subjects. He had noticed that dysmenorrhœa was very common—in nine out of ten—in cases of flexion of the uterus. His experience had not borne out that of Huguier as to the frequency of elongation of the cervix uteri.

Art. 237.—*On Pelvic Hæmatocele, with Special Reference to its Diagnosis and Treatment.*

By Alfred Meadows, M.D., M.R.C.P., Physician to the Hospital for Women.

(*Obstetrical Transactions*, vol. xiii.)

At a meeting of the Obstetrical Society of London, held June 7th, Dr. Meadows read a paper on the diagnosis and treatment of pelvic hæmatocele.

The author expressed his conviction that this affection, though not common, is not so rare as is generally supposed; nor in many cases is the diagnosis a matter of much difficulty, though in some, and especially in the less severe forms, or when seen long after the attack, the diagnosis is extremely puzzling. Allusion was made to a paper by Dr. Barnes on "Intra-peritoneal Hæmorrhage," published in the last number of St. Thomas's Hospital Reports, the author criticising some of the cases in regard to their diagnosis, and expressing some doubt as to their accuracy in this respect, judged solely by the details given. An examination of these cases in their results, when compared with others of the same kind collected from the works of MM. Bernutz and Goupil, showed a very startling contrast; for, of forty cases of the former, three only died, whereas, in sixty-two cases of the latter, only eighteen recovered. In regard to diagnosis, the author remarked that the difficulties were greatly lessened in cases where the attendant happened to know the exact condition of the parts before the occurrence of the attack; because, as swelling necessarily results from the hæmorrhage, its absence before the attack, and its immediate discovery afterwards, together with the attendant symptoms, pointed at once to the nature of the case, inasmuch as no other swelling occurs thus suddenly. The differential diagnosis of uterine displacements; of tumours, either of the uterus or ovaries becoming suddenly impacted in one or other *cul-de-sac;* of pelvic cellulitis; or of pelvi-peritonitis, was dwelt upon at some length, and their distinctive features pointed out. The author recommended the division of the cases into two groups, the first to include all those which originated in the performance of the functions of menstruation or parturition, and the second those of distinctly organic origin, not connected directly with the uterine functions. He advocated more frequent resort to puncture, grounding his recommendation on the fact that, of Bernutz's eighteen cases which recovered, nine were operated upon, seven ruptured spontaneously, and only two were left alone; while, out of twelve fatal cases, two only were tapped, one ruptured spontaneously, and nine were left alone. The author related two cases in which he had tapped successfully, and the paper ended with some directions as to the conditions, mode, and time of operating.

Dr. Barnes said Dr. Meadows doubted his cases because they were so many; but was his experience so exceptional? Olshausen said that in 1867 Scanzoni had only seen two cases, but that he ought to have seen two hundred. Olshausen himself had

seen thirty-four cases of hæmatocele in eleven hundred and forty-five gynæcological cases. Seyfert had seen sixty-six cases out of twelve hundred and seventy-two. In fact, it was only necessary to look for these cases with intelligence in order to find them. He had expressly stated in his paper that some of the cases were, no doubt, open to criticism as to diagnosis. In some this had been drawn from the history and general symptoms, and was not established by local exploration.

Dr. Snow Beck said his experience led to the conclusion that retro-uterine hæmatocele was a comparatively rare affection. He did not think that rupture of the gravid uterus, or extra-uterine gestation cysts, or ovarian cysts with large effusion of blood into the peritonæum, ought to be included under this term, which was properly restricted to effusions of blood encysted in the pelvic peritonæum, or extravasated into the loose cellular tissue in the pelvis.

Dr. Grailv Hewitt stated that during the last five years he had observed in University College Hospital altogether, he believed, twelve or fifteen cases. They had all recovered, and in no case had puncture been resorted to.

Dr. Tilt remarked that, if the German pathologists had found hæmatocele common, the French writers considered it to be very rare. Since he first drew the attention of British pathologists to hæmatocele in 1853, Dr. Tilt had only met with twelve cases. Pelvi-peritonitis was often mistaken for hæmatocele. The majority of cases required no surgical treatment, but when the collection of blood was considerable, and the tension of the sac very great, he had repeatedly punctured it through the vagina, and allowed the blood to drain away of its own accord, thereby greatly relieving the patient's suffering, and shortening the duration of the disease.

Dr. Greenhalgh agreed with Dr. Meadows that pelvic hæmatocele was by no means so frequent nor so harmless an affection as Dr. Barnes would lead the profession to believe. On a rough estimate, he (Dr. Greenhalgh) did not think that he had seen more than twenty-five indubitable cases of that affection, notwithstanding he had had extensive opportunities of meeting with such cases.

Mr. Spencer Wells said his personal experience of pelvic hæmatocele was chiefly as a sequel of ovariotomy. He believed the less severe forms, where only small quantities of blood were effused, and afterwards absorbed, were very common. When the tied or cauterized pedicle was in the pelvis, a good deal of trouble was sometimes observed at each menstrual period for some months, with all the signs of hæmatocele. In the slighter cases he considered rest and opiates constituted the best treatment. But there were other cases where a high temperature, rapid pulse, loss of flesh, dry tongue and skin, with a painful, distended abdomen, and scanty concentrated urine, showed that the patient was being poisoned by absorption, and here not only puncture, but drainage, was necessary to save life. Puncture alone might only give temporary relief, or do harm by hastening decomposition of blood or pus; but, when a canula or draining-tube maintained a free escape for fluid and gas, cases apparently hopeless did well.

Art. 238.—*Hæmorrhoids in Pregnant and Puerperal Women*

By Fordyce Barker, M.D.

(*American Practitioner*, March, 1872.)

We make the following extract from Professor Barker's excellent paper on the above subject, giving in part his views on treatment:—

"When hæmorrhoids are developed during the later periods of pregnancy, the indications are obviously to counteract the constipation or the diarrhœa, and to stimulate and to restore the tonicity of the hæmorrhoidal veins. The inquiry will then naturally suggest itself, Have we any agent or combination of agents in the materia medica capable of effecting these results? I know of no article which so clearly and positively produces these two results as aloes, and on this I have mainly relied. I am well aware that the general voice of the profession is against the use of aloes where there is any tendency to hæmorrhoids. That 'aloes is contra-indicated by hæmorrhoids' is not only the doctrine of the 'Dispensatory of the United States' (Wood and Bache), but it is also the opinion of most writers on materia medica from ancient times down to the present day. 'Fuchsius was of opinion that, of one hundred persons who should take aloes frequently as a laxative, ninety would be attacked with piles. Murray blames physicians who are induced by the gentle and certain action of this medicine to expose their patients to so serious a consequence. It was to this purgative that Fonseca attributed the prevalence of piles among the inhabitants of Padua, and Stahl makes a similar statement in regard to the people of Hamburg. Calvin is cited as a prominent example of this mischief produced by aloes; for this celebrated reformer is said to have died ultimately from the effects of the piles which it gave rise to; but, as he was of a frail constitution, subject to quartan ague, gout, and gravel, the part which aloes bore in his demise may reasonably be judged to have been small.' But these opinions have not been accepted by all; for Cullen, Sir Benjamin Brodie, Trousseau and Pidoux, and others, have doubted whether aloes is productive of piles, but attribute this infirmity not to the medicine, but to the constipation which aloes is used to remove. I will, however, parenthetically say here, from my own observation, I am convinced that aloes will, under certain conditions of the system, and in certain doses, develop piles. The special property of aloes is 'to excite the muscular contractility of the colon and rectum,' and 'to stimulate the venous system of the abdomen, and especially of the pelvis.' That these are the effects of this agent I have not only the authority of special writers on therapeutics, as Pereira, Wood and Bache, and others, but I believe the general experience of the profession also will confirm the assertion. It would seem, therefore, that the use of aloes for the cure of hæmorrhoids in pregnant women would have s ggested itself from *a priori* reasoning; but I am not aware, from anything that I have read, that it ever has. I suppose that the general impression that aloes is contraindicated where there is any tendency to hæmorrhoids, and that it possesses

emmenagogue properties, has had great influence in preventing this. In my own case the use of this article for this purpose was the result of gradually accumulating observation rather than from any reasoning on the subject.

"In the early days of my professional life I was engaged to attend a woman in her confinement who suffered from obstinate constipation. I prescribed for her Dewees's pills. At the time of her confinement she mentioned that in her former pregnancies she had suffered very much from piles, but that my pills had cured them. If I had known of her hæmorrhoidal tendency I should not have given these pills, and I was therefore quite surprised by her statement, as the result seemed so contrary to all that I had been taught. From this time I began to experiment as to the effect of aloes in the treatment of hæmorrhoids, associated with constipation, in the pregnant; and for many years past I have constantly made use of aloes for their cure, whether the hæmorrhoids were the result of constipation or of diarrhœa. I give it, combined with other agents, according to the special indications of each case, and in such doses as I learn, by experience of the peculiar idiosyncrasy of the individual, are necessary to secure one easy, free, daily evacuation of the rectum. Some require a grain morning and evening, while in others a half-grain is sufficient. In anæmic patients I combine the aloes with the sulphate of iron. In the last two weeks of gestation I always combine it with the extract of belladonna. The following is a frequent prescription with me:—℞ Pulv. aloes soc., sapo. cast., āā ℈j; ext. hyoscyami, ʒss; pulv. ipecacuan., gr. v. M. Ft. pil. (argent.) no. 20. S. One morning and evening. When the patient is anæmic, I add to the above one scruple ferri sulphat. Some ten days or two weeks before the supposed time of labour I substitute the extract of belladonna, ten grains to one scruple, for the extract of hyoscyamus. When the hæmorrhoids are associated with an irritable rectum, and frequent, small, teasing, thin evacuations, I substitute for the hyoscyamus a small quantity of opium, giving a smaller quantity of the aloes, as in the following formula:—℞ Pulv. aloes soc., ext. opii aq., sapo. cast., āā gr. x. M. Ft. pil. no. 20. S. One morning and evening. It is unnecessary for me to multiply formulæ, as the general principles by which I am guided will be sufficiently evident from the above.

"In some cases I have not been consulted, and have not known of the hæmorrhoidal tendency of the patient, until my attendance during labour. I have seen the hæmorrhoidal tumours sometimes become very large during the labour. Dewees says: 'Much may be done during labour to prevent a severe spell of piles by the accoucheur making a firm pressure upon the verge of the anus with the palm of his hand guarded by a diaper, during the progress of the head through the external parts, and by carefully returning them after the expulsion of the placenta, as the sphincter is now fatigued, and will not oppose their descent.' I have frequently tried this expedient, but I cannot say that it has been very successful, as the tumours soon come down again, and under these circumstances they are very apt to become strangulated, inflamed, and cause a great deal of suffering. When I find this condition of things, I have within a few years past adopted the plan of forcible dilatation

recommended by my friend and colleague Professor Van Buren. My method is this: The patient being fully under the influence of chloroform, I select the moment after the delivery of the child and before the placenta is brought away. I push back the tumours within the sphincter, if I can readily; if not, I leave them alone, and introduce both thumbs, back to back, well in the sphincter, and, opening them as wide as possible, I draw them through the sphincter. During this time I have firm pressure made on the uterus by an assistant, and in several instances the operation was followed by the sudden expulsion of the placenta from the vagina. I direct the following ointment to be applied twice daily to the tumours, and well up in the rectum:— ℞ Ung. gallæ co., ʒj; ext. opii aq., ℈j; sol. ferri persulph., ʒj. M. Ft. ung. The result has been in every instance that the tumours have gradually disappeared, and the patients have had very little suffering from the operation.

"When hæmorrhoids come on after labour, the suffering is generally much greater than when it occurs during pregnancy. They are very often induced by the action of the purgative given two or three days after confinement.

"It is now many years since I have been convinced that castor-oil was one of the worst agents that could be used as a laxative when there is a tendency to piles, as in many instances I have seen its action develop them. For many years I have annually spoken of this to the medical class before whom I have lectured, and I have received many letters from former students corroborating my statement by their own observation. But I have never seen this alluded to except in one work— viz., 'Hardy and McClintock on Midwifery and Puerperal Diseases'— who incidentally make the following remark: 'We may first observe that castor-oil is ill suited for patients who have hæmorrhoids, being very apt to produce in them tenesmus and considerable irritation of the rectum.' I may add the following from Quain: 'Common opinion has assigned to castor-oil a character for blandness (probably because of its being an oil) to which it is not entitled. It is an efficient purgative, but, except when given in minute quantities, it usually irritates the rectum.'

"In those who have or are predisposed to have hæmorrhoids, I give the following on the second day after confinement:—℞ Magnesiæ sulph., Magnes. carb., Potas. sup. tart., Sulphur. sublim., āā ʒss. Mix thoroughly. S. One, two, or three teaspoonfuls of the powder before eating in the morning.

"This powder produces a soft evacuation, without pain, even when the hæmorrhoids are inflamed."

Art. 239.—*On Puerperal Fever.*

By Professor E. Martin.

(*Berliner Klinische Wochenschrift*, viii. 32, 1871; *Schmidt's Jahrbücher*, No. 9, 1871.)

Since 1860, when he stated his opinion that puerperal fever was due to a diphtheritic affection of the genitals, Prof. Martin has availed him-

self of every opportunity of proving the truth of this view. In statistical reports, all the febrile affections of the lying-in women, are unfortunately often collected under one head. Even thrombosis, which has been so arranged by many, ought not alone to be reckoned in connexion with puerperal fever, since in many instances it occurs in quite an isolated form, whilst thrombo-phlebitis at other times really accompanies or follows the diphtheritic process. This diphtheritic process in the genitals of lying-in women is to be regarded as the only essential element of puerperal fever.

The nature of diphtheria in other parts of the organism, especially in the mouth, has, as is well known, been found to consist chiefly in a growth of fungi, the spores of which penetrate into the tissues, and even into the blood, and in this manner set up a general affection. In diphtheria of the genitals investigation has not yet attained such results. Should we accept the view, however, that this process depends on fungous growths, the question arises whether the fungus causing the affection belongs or not to a distinct species, since we know of many fungi which germinate in the vagina both of the pregnant and barren woman, and do not give rise to any dangerous diseases; or whether the fungus be merely the bearer of the contagium; or, again, whether puerperal fever arises from the introduction of certain fungi and morbid changes of organic tissues and juices, favoured by special conditions of the lying-in woman.

According to the above views, one would, in the majority of cases of puerperal fever, find on the external genitals or within the vagina a diphtheritic deposit upon the local lesions, which in the form of fissures of mucous membranes are so often produced during parturition. Sometimes the diphtheritic process is restricted to the external parts, and the affection proceeds to detachment of the morbid deposit without any or with a very slight general affection. In most instances, however, the diphtheria is seated not only at the entrance to the vagina, but more internally in the vaginal canal, and on small or large abrasions of the mucous membrane of the os uteri, or of the body of the uterus, especially at the part previously occupied by the placenta. Although the diphtheritic deposit may not have been observed in frequent post-mortem examinations, it should not be forgotten that this in many cases rapidly disappears, and may have been destroyed by injections or cauterization. That it cannot be observed in the uterine cavity during life is obvious; its presence here can be determined only by the discharge of diphtheritic shreds with the returning injections. The process, as a rule, proceeds rapidly from the genitals, and extends to the peritoneum along the connective tissue which surrounds the vagina and the neck of the uterus, or along the mucous membrane of the fallopian tube, or again by the veins and lymphatics, which modes of extension are often combined.

The pelvic cellular tissue is then seen to be infiltrated with turbid serum as far as the peritoneal covering of the pelvic organs of generation, and the ovaries. In this latter region there is generally found some peritonitic exudation. The infiltration of the connective tissue may extend to the retro-peritoneal space, the kidneys and liver, and sometimes even to the pleura and lungs. This infiltration of the pelvic connective tissue frequently leads after a time to the formation of

abscess. Prof. Martin has always observed the diphtheria to have been preceded by infiltration of turbid serum. The extension of the diphtheritic process on the mucous membrane of the internal genitals as far as the peritoneum occurs less frequently. On post-mortem examination, one finds that the inner surface of the womb is lined by a sanguineo-purulent deposit; that one or both fallopian tubes are reddened, distended, chiefly along the outer third, and filled with a purulent mass, and that the fringes at their extremities are covered by a fibrino-purulent exudation. This may be observed in the absence of any other perceptible mode of extension. In cases of this kind there has generally been a sudden attack of the peculiar pains of peritonitis about two or three days after delivery. With cases of extension along the lymphatics, these vessels, especially in the uterus, are found filled with a white crumbling or fibrino-purulent mass; after a long duration of the affection, are sometimes observed circumscribed deposits of secretion which might be mistaken for abscesses. Extension along the lymphatics is usually complicated with serous infiltration of the connective tissue—so-called phlegmon. In nearly all of these cases, one or both ovaries will be found infiltrated with turbid serum, and traversed by dilated lymphatics, containing firm white clots or purulent fluid. In instances of this mode of extension, exudation into the abdominal cavity is seldom absent. That the extension of the diphtheritic process in some cases may take place through the vaginal and uterine veins, is especially shown by cases in which, after the throwing off of the diphtheritic deposit from the genitals, a persistence of the disease is to be alone attributed to venous thrombosis and its sequestra. With these various and frequently combined modes of extension of the diphtheritic process from the genitals to other parts of the organism, the disease extends also to the large glandular organs of the abdomen, the kidneys, spleen, and liver, and finally even the lungs are found to be infiltrated with turbid serum, and pleuritis is associated with peritoneal exudation. Less frequently, and in cases of long continuance of the disease, peripheral inflammations of connective tissue occur at various parts of the body, most frequently in the joints, about the muscles of the extremities, and around certain glands. Indeed, the great multiplicity of the local affections and their combinations constitute a characteristic peculiarity of puerperal fever. As we see now one and again another of these affections most prominent, we can understand how different authors have regarded different local affections as being essential to puerperal fever.

Although in reference to the etiology of the disease considerable advances have been recently made, much remains dubious. Though, as often occurs, the remains of the after-birth are retained within the generative organs for weeks and even months without the occurrence of putrid decomposition and the exciting of symptoms of puerperal fever, the retention of fragments of the ovum will, as is proved by numerous cases, be followed by septic decomposition and puerperal fever. From our knowledge of the influence of ferment bodies suspended in the air on putrefaction, decomposition would have been rather expected in those cases where fragments of placenta protrude from the os uteri and hang down in the vagina, and are accessible on every side to the atmo-

spheric air. There are, however, enough proofs of the occurrence of puerperal fever in spite of complete inclusion of retained fragments of ovum within the cavity of the womb. In such cases as these, some other cause must be sought for. Professor Martin has often observed that women who are suffering from a recent attack of gonorrhœa at the time of parturition are often the subjects of puerperal fever, and that the diphtheritic process is developed immediately and runs a severe course. One must concede therefore, that these antecedent inflammatory processes in the mucous membrane of the genitals have a certain connection with the origin of the diphtheria. More frequently, without doubt, the invasion of the diphtheria takes place during parturition, rarely during the lying-in; sometimes it occurs even a short time before parturition. Experience teaches that dead material and decomposed organic substances are the predominant sources of danger, especially in those instances in which an examination has been made with fingers previously soiled in handling portions of a dead body. Diphtheria may be also produced by certain secretions from suppurating wounds and ulcers, and also by the products of diphtheritic processes which often take place in typhus, scarlet fever, cholera, open cancer, &c. Most frequently, however, the affection is carried directly from one lying-in woman to another by means of linen, sponges, or the fingers of the medical attendant and midwife. The duration of the incubation period is forty-seven or forty-eight hours, according to Veit.

Diphtheria of the genitals may in exceptional instances attack women who are not lying-in. A case of this kind occurring in his own practice is reported briefly by Professor Martin. According to observations hitherto made, it seems that this kind of diphtheritic process is rarely followed by a deleterious general affection. It is well known that newly-born infants, especially those of lying-in women who have been attacked by puerperal fever, may sometimes be the subjects of similar affections and to these succumb.

The symptoms of the affection are well known. Very characteristic seems to be the high temperature which, except in cases where the disease is locally restricted, always attains and even exceeds forty degrees centigrade. The pulse is very frequent. At first, generally, the constitution is but little disturbed. The prognosis is usually unfavourable; one-third of the cases of genital diphtheria associated with well-marked fever are fatal. With regard to the treatment, prophylaxis demands our whole attention. The most sedulous cleanliness cannot be too forcibly recommended. When diphtheritic processes have made their appearance, the medical attendant should, if it be possible, content himself with only a close external examination. The internal administration of quinine, according to Professor Martin, does not seem to be of much utility. Of late recourse has been had to local means, as vaginal injections of solutions of creosote, carbolic acid, lunar caustic, and of chlorine water. These means have not brought so often as was to be hoped any decided improvement, but yet the temperature may be often considerably reduced and the uterine cavity cleansed.

(c) CONCERNING THE DISEASES OF CHILDREN.

ART. 240.—*On Neuralgia.*

By CHARLES WEST, M.D., F.R.C.P.

("Disorders of the Nervous System," London, 1871.)

Dr. West, after alluding to the frequency with which functional nervous affections are met with in the adult, and their long continuance without the supervention of any organic disease, observes:—

"In the infancy and childhood, however, pain referred to any part signifies almost without exception that disease of some sort or other is going on there, or near at hand. The tears so profusely shed do not prove that pain is the lot of the infant more than of the grown person: but at one time cries are the only, as they long continue the most expressive language. Hunger, sleeplessness, fatigue, discomfort of any sort is expressed by cries; while the character of the cry goes far towards helping us to determine the nature of the suffering. But I have never in infancy known any instance of pain—severe, obstinate, recurrent—for which, sooner or later, a distinct local cause was not found; and even in later childhood the rarity of real neuralgia is extreme.

"There are two classes of cases in which it is of especial importance to bear in mind this caution: the one those cases in which pain is referred to the head; the other those in which it is situate in one of the lower limbs. In the former case the pain is almost invariably symptomatic of organic disease of the brain, in the latter with almost equal certainty of hip-joint disease. And yet I have often seen it regarded for many days as purely neuralgic. The mistake is the more likely to be committed when pain is referred to the head, owing to the undoubted rarity of intense pain as a symptom of acute disease of the brain, while the severe suffering which sometimes attends cerebral tubercle is almost always associated with some positive symptom or other of organic mischief. But now and then I have seen cases where, after some previous failure of health, and some trivial head discomfort such as scarcely attracted attention, pain has come on, so sudden, so violent as to throw all other symptoms completely into the back-ground, so distinctly and almost completely intermittent, and for a time, even under the influence of quinine in large doses, as to mislead even the most wary. And yet time has undeceived one as to the nature of the case; the intermissions have become less complete, and of shorter duration; the influence of quinine has passed away; the intervals between the paroxysms of pain have no longer been times of cheerfulness, but of indifference to objects around, till the indifference has deepened into stupor, and suffering has abated just in proportion as consciousness has been lessened.

"It is most difficult to lay down rules for the avoidance of error, for while it is undoubtedly true that neuralgia may follow either on some previous ill-defined feverish attack, or may take place during convalescence from typhoid fever, it is just in such conditions that real disease the brain oftenest comes on; and the latter is of far more frequent

occurrence than the former. It may, however, be of some use to bear in mind that neuralgic pain is localized in some part of the head; that, while it is very intense and accompanied with excessive intolerance of light and sound, it is also often attended with weeping, and the importance of tears as disproving the existence of real inflammatory disease either in the head or chest, first dwelt on by Trousseau, cannot be overrated. The intervals between the paroxysms are times not only of perfect ease but of cheerfulness; sickness is absent, the power of taking food is not lost, and sleep, if not interrupted by pain, is quiet and refreshing. Moreover, there is no dizziness, though there may be heat of head; the pulse is unusually quick and feeble, and, I must add, may be irregular or actually intermittent, for while, as a general rule, irregularity of the pulse is one of the least invariable symptoms of disease of the brain, there are some children with whom any disorder of the nervous system, especially such as is sympathetic with disturbance of the digestive organs, is invariably attended with irregularity of the heart's action.

"Pain, dependent on real cerebral disease is rarely limited to one part of the head; or, if it be, is referred to the forehead. It is generally, though not invariably, less intense, the intermissions of suffering are less complete, and some one symptom almost always attends the pain: it may be sickness or obstinate constipation, or dislike of light or sound, even when the pain abates—some one symptom, small in itself, but enough to keep alive the anxiety of anyone who subscribes to Morgagni's saying, that 'the habit of observation is the foundation of the art of medicine.'"

Art. 241.—*On the Antiphlogistic Treatment of Children.*

(*The Medical Record*, October 16, 1871.)

At a meeting of the New York Academy of Medicine, on September 21st, a report on diseases of children was read by the Secretary, Dr. Charles A. Leale, who stated, in opening, that as the antiphlogistic treatment of the diseases of women and children had been most generally discussed, he thought it advisable to give a brief account of the subjoined opinions of the various members of the Section on this subject:—

Dr. Chamberlain, in alluding to the antiphlogistic treatment of the diseases of children, remarked that the term was a very old one, dating back to the time of Stahl and Van Helmont, and is understood to mean whatever relates to the treatment and cure of the febrile conditions, and the process and cure of inflammation. He then gave the following theories of inflammation as laid down by Dr. Jacobi: *First.* Inflammation consists in traumatic influence on the blood-vessels, either by direct injury or changed action. *Second.* Disorder of the circulation. *Third.* Exudation of the fluids and formed elements of the blood. *Fourth.* Nutritive disorder in the change and growth of cells. Dr. Peaslee divided the process into stages, as follows: Hyperæmia, or active determination of blood; Congestion, approaching or attaining to capillary stasis; and Exudation, *first*, of liquor sanguinis; *second*, of fibrin;

and *third*, of cell growth. These processes are to a certain extent distinct and opposite. Active determination is increased capillary circulation; congestion is retarded capillary circulation, and a rational therapeutist treated them differently. Venesection may be salutary in the commencement of pneumonia and mischievous after hepatization has taken place. Nitrate of silver applied to a healthy conjunctiva will produce hyperæmia; if applied to a congested conjunctiva, the congestion is relieved. Depressants become phlogistics, and irritants become sedatives, according to the stage in which they are used. He remarked that, according to Jacobi, the proximate cause of fever in children has always to be looked for in the nervous system; hence the importance and value of those therapeutic agents which affect the nervous system either through cutaneous or mucous surfaces, such as heat, cold, opium, veratrum, aconite, camphor, ergot, quinine, &c. He has always recognized cold as an antiphlogistic, but generally used it by cold affusion or sponging, and not by the full cold bath. In the exanthemata, cerebral diseases, intermittent, remittent, and typhoid fevers, when attended with great heat of the skin, sponging with cold water is both grateful and salutary. In pleurisy, pericarditis, or catarrhal fever, he generally preferred warm sponging or the warm bath, to relax the astringent capillaries and restore the suppressed secretions of the skin. The success in attempting to control inflammatory process by cold, will depend upon the situation of the disease, and the assiduity of its application. He would not attempt to control inflammation of the liver, lungs, or kidneys, by cold, but would treat synovitis of the knee-joint by ice-cold applications.

Inunction he spoke of as being a very old remedy, and pretty generally approved by the profession; he generally used fresh lard. The modus operandi of this form of treatment was not very apparent to him; the only rational solution seemed to be the protection that it afforded to the cutaneous nerves from the air. Opium he seldom uses in the febrile state of children, except occasionally in the form of Dover's powder. In peritonitis, pleuritis, or pericarditis, where the leading indications were to restrain motion of the serous surfaces upon each other; also in dysentery and muco-enteritis, its use has been followed with the best results. As an anodyne in the fever dependent upon local pain, and as an antispasmodic to the non-striated muscle, no remedy could compare with it. But its use in children is hazardous, and it should be prescribed with great care, not only on account of the idiosyncrasy of children, but on account of the variable tolcration of the drug. Veratrum has not produced pleasant or satisfactory results in his hands. Even in small doses it has produced depression and vomiting at times, before its effects could be detected by the pulse. If it had been combined with hyoscyamus in mucilage, as recommended by Dr. Jacobi, he thought the result might have been different. Tincture of aconite he considers a valuable cardiac and arterial sedative, also a diaphoretic in the febrile complaints of children; he gives one-half and one drop doses of the officinal tincture, largely diluted in water, and repeated once in two or three hours. The views of Jacobi upon camphor, quinine, and ergot, that they act as sedatives by their effect upon the vaso-motor nerves has interested him; but the effect of the latter agent

he considers as analogous to sulphuric acid, which has quite a reputation as an anti-febrile remedy. He is not aware that it either reduces the power or frequency of the pulse, or lowers the temperature of the body.

Dr. W. C. Roberts gave the explanations of inflammation as offered by Bennet, Andral, Jacobi, and others, and further remarked that as a secondary consequence of inflammation Kaltenbrunner had said that, if alcohol be applied to the web of a frog's foot, the blood presently flowed toward the irritated part, causing acceleration of the circulation. If the dose of alcohol is increased, the phenomena of congestion increase considerably, and extend over a larger space; at length points of stagnation appear in the focus of the affected parts, and announce the establishment of inflammation. If the dose of alcohol be still further increased, the points of stagnation become larger and more numerous; the circumferential disturbances of the circulation extend themselves, and at length implicate the whole of the circulating system, and give rise to a fever which is added to the inflammation, the circulation in the opposite foot being as much accelerated as in that operated on, and the general system disturbed.

Dr. A. C. Post stated that he never resorted to venesection in the infant, but when local depletion is demanded he uses leeches, which have been of great service, especially for the relief of the intense pain occurring in acute otitis. He applies the leech to the membrane of the tragus, and has procured by it more favourable results than any other means of treatment. He considers the antimonii potassio-tartras in $\frac{1}{60}$ gr. doses one of the best antiphlogistic remedies we have. In regard to blisters, he thinks that they are generally left on too long; would never leave one on a child of two years longer than one hour and a half. His directions are to remove them before any vesication appears—thereby preventing absorption. He does not doubt that a sedative effect is produced by blisters, but believes they have been a much neglected as well as a much abused means of treatment.

Dr. Post stated in answer to a question of Dr. Roberts, that it is by contiguous sympathy the result is obtained when we excite cutaneous circulation to relieve a remote inflammation, viz.: applications to the surface of the scalp relieve the brain, and over the epigastrium the stomach. He thinks that the effect of local blood-letting is in proportion to the means by which we approach the seat of disease, as when we relieve a congested os uteri by scarification. He has often seen patients much benefited by the application of leeches to the ala nasi to relieve an over-congested brain; half an ounce thus taken from the Schneiderian membrane will do more good than four ounces taken from the temple. He always applies the leech to the membrane covering the septum, where no visible scar is left, and the hemorrhage can easily be controlled by pressure. He mentioned the case where a physician, in his endeavours to make a high application, lost the leech for some time until it was coughed up and expectorated by the patient.

Dr. Mark Blumenthal thought that a great change had taken place in the treatment of inflammatory diseases of children; that at present there were few physicians residing in cities who resorted, as was formerly done, to either bleeding or blistering. He has used leeches in brain

diseases and the like, but now prefers other methods of treatment, except where there is great hyperæmia. During the state of congestion he generally prefers ice-cold applications. In the treatment of croup he prefers either ipecacuanha or the sulphate of copper to tartar emetic, only using the latter for its emetic effect. When there is a full pulse and considerable febrile movement, he administers digitalis, and sometimes veratrum viride. In inflammatory diseases of the brain, throat, and pulmonary organs, good results are produced by mercurials frequently administered in minute doses. Prefers large sinapisms to blisters, also warm water applied over a large cutaneous surface. He does not use applications of ice to the abdomen during an inflammation, preferring large, hot flax-seed poultices, which he has seen produce remarkable results. With reference to quinine and iron, although he does not consider them, properly speaking, antiphlogistic remedies, yet he often uses them in inflammatory diseases, more especially for their tonic effects, where they are oftentimes of great service by enabling the patients to withstand the disease, and to convalesce more rapidly.

Dr. H. P. Farnham said that he had been much pleased with the effects produced by aconite in the treatment of inflammatory diseases of infancy. As a hypnotic, he has given the hydrate of chloral in one-and-a-half grain doses to children six months old. He stated that although more palatable when given in combination with a syrup, yet it was prone to decomposition, to prevent which he usually added a few drops of chloroform to the mixture.

Dr. Sewall stated that in treating inflammatory diseases of children it was necessary to begin early in guarding against debility. He regarded the treatment by counter-irritation as very important. For several years past he had ceased to use the tincture of aconite for young children, on account of the bad effects noticed.

Art. 242.—*On the Acid Dyspepsia of Infants.*

By Eustace Smith, M.D., Physician Extraordinary to H.M. the King of the Belgians, Physician to the North-west London Free Dispensary for Sick Children, &c.

(*American Journal of Obstetrics*, p. 97.)

Acid dyspepsia is one of the commonest digestive derangements met with in young children, and few infants can be said to escape it altogether. A trifling complaint, and readily recovered from when attended to early and judiciously treated; if neglected, it becomes a most serious and obstinate disorder, which may resist all treatment, and may lead to the most extreme emaciation, or even to death itself.

The food taken seems shortly after being swallowed to undergo an acid fermentation; sour gases are evolved, great discomfort is produced and nutrition is seriously interfered with. The derangement is usually caused by overfeeding with farinaceous foods. It is too commonly the case that these foods are given in enormous quantities—in quantities greater than any infant with ordinary digestive power can by any possibility assimilate. The reason of this reckless feeding is, partly the

mistaken notion which so universally prevails of the digestibility of these foods; partly the eagerness with which the child himself will swallow large masses of sop; for the griping and flatulence occasioned by the presence of large masses of starchy matters in the alimentary canal will—if not too severe—excite a fictitious hunger which is not easily appeased. An infant of three or four months old, in whom the secretion of saliva is but lately established, or an infant of a yet earlier age, who has no saliva at all, is often fed with a large table-spoonful of corn flour or other farinaceous powder, boiled with milk or with water, four, five, and even more times in the day. The food lies undigested in the bowels, ferments, and a state of acid indigestion is set up, which does not cease with the removal by vomiting and purging of the cause which has produced it. Even a return to a simpler diet is often insufficient by itself to put an end to the derangement; plain milk and water is vomited sour and curdled, and everything taken into the stomach seems to undergo the same acid change.

As this derangement is so easily excited by improper feeding, even in healthy infants, children whose strength has been already reduced by disease, and whose digestive power is therefore lowered in proportion to the weakness of the whole system, are still more likely to be affected by the same cause. On this account acid dyspepsia is a not unfrequent sequel of acute disease in infants, and may, after apparent convalescence from the primary disorder, lead to death by the interference with nutrition and by the exhaustion which it so often produces. The diarrhœa, which is a not uncommon sequence of some of the acute specific diseases, as scarlatina and measles, is often primarily excited by this derangement, and is too frequently a cause of death. Severe operations upon the child, such as that for stone in the bladder, may also be followed by the same complication, for anything which lowers the easily depressed general strength reduces also the digestive power and predisposes to this complaint.

Children brought up by hand are especially liable to this acid dyspepsia, for even when fed upon a suitable diet, carelessness in the administration of the food selected, so that the stomach is overloaded by too frequent or too copious meals, or neglect of the necessary cleanliness, so that they are allowed to take milk which by being put into a sour bottle has already begun to change, will excite this indigestion. Amongst the poor of London it is not uncommon to find a child brought for medical advice sucking at a feeding-bottle of which the intensely sour smell at once discloses the cause and suggests means for the relief of the complaint under which he is labouring.

The earliest symptoms of this derangement are due to the uneasiness produced by flatulent distension and griping pains. The infant is restless and fretful, whining and crying and refusing to be pacified. Large quantities of gas are evacuated both by the mouth and by the rectum, affording at first some relief, and the child becomes quieter until a reaccumulation takes place. At night the griping is exceedingly distressing, and his sleeplessness at this time, by the discomfort it occasions to his attendants, is usually the symptom which assumes the greatest prominence in the mind of the mother, and is the chief reason for applying for advice. The infant, after lying for a time in uneasy

sleep, starting, twitching, moaning, frowning, and drawing up the corners of his mouth, suddenly wakes up with a loud cry, and is seized with a fit of violent screaming which resists all efforts to calm him. He throws himself from side to side, jerks about his lower limbs, or suddenly straightening them out in a line with his body, becomes for a few moments rigid as if turned into stone. These attacks of colic are sometimes so severe as to cause great alarm; the child falling into a state of collapse, or being thrown into convulsions, which may be repeated again and again. The ravenous appetite noticed in children suffering from flatulence has already been referred to. This symptom usually disappears as the derangement becomes more marked. Vomiting comes on after a time, the appetite then fails, and the child is thirsty and feverish. Vomiting is at first excited by taking food, but may afterwards occur when no food has been lately taken, and in bad cases may be caused by a sudden movement, or even by a touch, as in wiping the mouth. The vomited matters consist at first of food and curdled milk, afterwards of clear fluid like water; the smell is usually intensely sour. The bowels at first are confined, but after a time diarrhœa comes on, the motions being either pale, frothy, and sour-smelling, or watery and fetid. There may be straining during the passage of a stool, in which case the motions may contain streaks of blood. An eruption of red strophulus, covering the body and arms of the child, is a not uncommon symptom; it may be mixed with urticaria.

An infant suffering from this derangement soon becomes pale and thin. His face assumes a constant expression of fretfulness, which is increased by the furrow which appears, passing on each side from the nose, to encircle the corner of the mouth. The lower eyelid and upper lip are disposed to be livid; the lips twitch, and the corners of the mouth are frequently drawn up, giving a peculiarly plaintive and helpless expression to the face. The fontanelle is depressed more or less deeply, according to the degree to which the strength is reduced. The eyes sometimes assume a fixed stare, while the muscles of the face twitch, and the thumbs are drawn inwards upon the palms of the hands. These nervous symptoms—well known to nurses by the name of inward fits—are of importance, as being sometimes the forerunners of convulsions. The tongue is at first covered with white fur, through which red papillæ project; afterwards it is apt to become pale and clean, or with little patches of fur scattered here and there over the dorsum. In bad cases the whole body has an offensively sour smell. This smell proceeds not only from the breath, but from acidity of all the secretions; the saliva, the perspiration, and the urine being all intensely acid. The cutaneous secretion is, however, seldom in excess; more usually the skin is dry, and is in consequence harsh and rough to the feel, especially at the backs of the arms and the belly. The feet are generally cold, and the child lies with the knees drawn up to the abdomen. The coldness of the feet is no doubt one cause of the griping pains which are so constant in this derangement, for even in healthy infants abdominal pains are frequently excited by coldness of the feet, and cease when these are warmed. During the earlier periods of this disorder the complexion turns slightly yellow from time to time, the yellow tint remaining for some hours or days. Occasionally the skin becomes completely

jaundiced. After the complaint has existed for some time a peculiar earthy tint is noticed of the face and whole body, which is very characteristic of chronic derangement.

If the disorder is primary, and is not soon arrested, a chronic catarrh of the stomach is often set up, the bowels becoming obstinately confined, and the vomiting continuing as a persistent condition. In other cases, again, the derangement may settle principally upon the bowels, leading to a chronic diarrhœa. The most extreme emaciation is often reached through these means, and it may be only after weeks, or even months, of illness that a termination by recovery or by death is arrived at.

When the disorder is secondary to some acute disease, or follows a serious operation, the strength is usually so much reduced by the original illness that the child, weakened more and more by the vomiting and diarrhœa, and by his inability to digest any nourishment whatever, soon becomes exhausted. Thrush appears upon the inside of the mouth and the child sinks and dies. Pneumonia is a not uncommon complication in the latter stages of the disease, and if the strength be much reduced, may exist without manifesting its presence by any of the usual symptoms. There is no cough, and the heat of the body is not appreciably heightened, or, if heightened at first, the elevation of temperature soon passes off. This pneumonia usually attacks the bases of both lungs.

The earlier treatment is commenced in this derangement the more readily will the complaint be arrested, for as the strength becomes more and more reduced, and the stomach and bowels become more and more disordered, treatment, which in an early stage would be at once attended by improvement, loses much of its efficacy, and great difficulty is experienced in making any impression upon the disease.

When the case is seen early, and the symptoms complained of are merely griping flatulence, with ravenous appetite, unaccompanied by sickness or diarrhœa, careful inquiry should at once be made into the diet and general management of the infant. It should be explained to the parents that the appetite will best be satisfied, not by increasing the quantity of farinaceous matter and the frequency of the meals, but by carefully adapting the food supplied, both in quality and quantity, to the digestive power of the child, so that the nourishment given may be only such as the stomach is able to digest. This may seem a simple and self-evident proposition, but it is one which is constantly forgotten. That a child will be nourished in exact proportion to the amount of food he swallows, and that the more solid the food the greater its nutritive power, are two articles of faith so firmly settled in the minds of many mothers that it is very difficult indeed to persuade them to the contrary. To them wasting in an infant merely suggests a larger supply of more solid food—every cry means hunger, and must be quieted by an additional meal. It is difficult to lay down precise rules for diet in every case of this derangement. This is a matter which can be properly learned only by experience. There are, however, certain plain rules which should always be observed. Of these one of the most important is, that farinaceous food is unsuitable to an infant under the age of three months. Before that age he should be restricted entirely to the

breast, supposing that the secretion of milk be of proper quality and be supplied in sufficient quantity. In cases, however, where additional food has to be given on account of the insufficient supply of breast-milk, recourse must be had to cow's milk, or the milk of the ass. If cow's milk be used, it should be diluted with a third part of lime-water, in order to prevent the too firm coagulation of its casein. Even, however, when thus diluted and alkalinized, the cow's milk is sometimes undigested by young infants, who seem to thrive better upon the milk prepared with a very small quantity of arrowroot or baked flour. This scarcely accords with the statement made above, of the unsuitableness of such foods to young infants; but an explanation of the seeming contradiction is found in considering the action of the farinaceous food under such conditions. The arrowroot itself probably contributes little, if anything, to the nutrition of the body, but when thus intimately mixed with the cow's milk it has a mechanical action in separating the casein into minute portions. The curd, therefore, coagulates, not in one large clot, but in a multitude of small clots, which are more readily attacked by the digestive juices. It is, however, as has already been said, always a risk to give farinaceous food to young infants, and the same object may be as readily effected, and without any danger to the child, by adding a small quantity of isinglass or common gelatine to the diluted milk in the proportion of one teaspoonful to four ounces.

In older children, brought up upon artificial food, the above symptoms are often complained of, even although the quality of the food with which they are supplied leaves nothing to be desired. In these cases it is the quantity which is the fault: the child is supplied with food largely in excess of his wants or his powers of digestion, and the stomach and bowels revolt against the burden imposed upon them. For an infant of six months old, one, or for a very robust child two teaspoonfuls of farinaceous food, carefully prepared with milk, and given twice in the day, are as much starchy matter as he is able readily to digest. His other meals should be composed of milk and lime-water, or the milk and water with isinglass, as directed above.

The kind of farinaceous food is of some importance. Different foods vary very much in the proportion of their several constituents, and the albumen, gluten, salts, &c., they contain are to be considered quite as much as the starchy matter. The very best food is, perhaps, pure wheaten flour slowly baked in an oven till it crumbles into a light greyish powder. This, prepared with milk, and sweetened with milk sugar, forms an admirable morning and evening meal. It may be varied occasionally with other farinaceous articles, but whatever be the food selected, the quantity mentioned must not be exceeded. An alteration in the diet, in accordance with the above rules, a small dose of castor oil, or rhubarb and soda, to clear out undigested matter from the bowels, and the administration of a little bicarbonate of soda or potash, with an aromatic to neutralize any remaining acidity and promote digestion, are all the measures that are required at this stage.

If the derangement have gone on to vomiting and purging, with an intensely sour smell from the breath and from the ejected matters, other means must be resorted to. In this case the stomach and bowels are filled with the acid products of fermentation, and the vomiting and

diarrhœa are merely the forcible efforts of the alimentary canal to expel its irritating contents. Sedatives to the stomach and astringents to the bowels are here out of place; we shall best cure the derangement by assisting the expulsion, and not by obstructing the exit of the fermenting food. In determining, however, the exact measures to be adopted, the state of the child's strength is an important consideration, and this is best estimated, not by the condition of the pulse, but by the degree of depression of the fontanelle. If the fontanelle is not much hollowed, a teaspoonful of ipecacuanha wine should be at once administered, and should be repeated every ten minutes until vomiting be produced. The acrid matters in the stomach having been thus evacuated, half a teaspoonful of castor oil should be given after a short interval, to act gently on the bowels, and the child should be allowed nothing but a little cold thin barley water, given occasionally with a teaspoon. At the same time the belly should be kept covered with a hot linseed-meal or bran poultice, and the child, warmly wrapped up, should be kept perfectly quiet in his little cot.

If the derangement have only existed a short time, the above measures will be usually successful in checking the symptoms, and the child will be found to retain the breast-milk, or the milk and water with which he is supplied in small quantities. Any tendency to acid fermentation that may remain should be neutralized by five-grain doses of bicarbonate of soda, given three or four times a day, and the patient may be allowed to return very gradually to his ordinary diet.

When, however, the derangement is of long duration, or is secondary to a severe operation or to some acute disease, the symptoms are not so easily overcome. Here the weakness, as shown by the depressed fontanelle, will not allow very active measures to be employed, and therefore the accomplishment of our twofold object—viz, of removing already formed acid from the system, and of preventing further fermentation—requires the most careful management. Emetics are here out of the question, for the strength will not bear further reduction, and the administration of such a remedy would be attended by the greatest danger. Our first care should be to endeavour to restore the circulation to the extremities, by placing the feet as high as the knees in hot mustard and water. If the weakness be very great, the whole body may be immersed in a mustard bath as high as the neck. It is of extreme importance in such cases to restore the proper action of the skin, for it is by this means chiefly that we hope to effect the escape of acid from the system. On being removed from the bath the infant should be carefully dried: a hot linseed-meal poultice is then to be applied to the belly, and the child, well wrapped in flannel, must be returned to his cot. The warmth of the surface must be kept up by hot bottles placed by his sides, and the feet and legs should be well rubbed at intervals with the hand alone, or with a liniment composed of equal parts of compound soap liniment and the compound liniment of camphor. If the child can bear the motion, frictions with the same embrocation may be used to the whole body; but in cases where the weakness is extreme and the vomiting obstinate, violent retching may be excited by the slightest movement, so that the frictions would have to be discontinued. In such cases the feet and legs should be wrapped in hot flannels on which some flour or

mustard has been sprinkled, and the most perfect quiet should be enforced. A napkin must be placed under the chin, to receive all matters ejected from the stomach, and when moistened the cloth must be immediately removed and a clean one applied in its place.

If diarrhœa exist, astringents are not to be employed so long as a sour smell from the breath and evacuations indicates the continuance of fermentation in the stomach and bowels. For a child of a year old, twenty drops of castor oil can be administered, and will be usually kept down. After its action a simple chalk mixture may be given or a draught containing five grains of bicarbonate of soda, with three grains of nitrate of potash, in some aromatic water, three or four times in the day. Half a drop of tincture of capsicum is a valuable addition to each dose of this mixture.

If there is constipation, the bowels must be opened by an enema containing castor oil, and be kept in regular action by the occasional administration, as required, of one or two drops of a solution of podophyllin in alcohol (a grain to the drachm), or by suppositories of castile soap placed in the rectum.

The form of nourishment to be given in these cases is of the utmost importance. All matters capable of undergoing fermentation must of course be excluded. Even milk itself, however diluted and alkalinized, can seldom be borne, as it is usually vomited sour and curdled immediately after being taken. Women's milk is usually well digested, but not always. In some cases it seems to agree as the milk of the cow; in others, where the irritability of the stomach is very great, the mere movement of the mouth in the act of sucking may be sufficient to excite a return of the vomiting. If this be found to occur, the breast-milk should be given with a teaspoon. In cases where a return to the breast is impracticable, or is not followed by the expected improvement, a good food is whey, made fresh as required by adding prepared rennet to cow's milk in the proportion of a teaspoonful to the pint. To two tablespoonfuls of the whey add one tablespoonful of fresh cream, and dilute with two tablespoonfuls of hot water. Of this food small quantities can be given at regular intervals, and care must be taken that it be either hot or cold, but not tepid, as liquid food given in a lukewarm state would be apt to favour a return of the vomiting. Liebig's food for infants, carefully prepared with freely diluted cow's milk, will often be borne; but in very bad cases it is inferior to the diet just described. In addition, the waning powers of life must be supported by five-drop doses of pale brandy, given in a teaspoonful of the food every hour, or even oftener, according to the condition of the fontanelle.

By such measures success is often attained even in the very worst cases of this derangement The obstinate vomiting is best arrested, not by sedatives, but by giving the stomach as much rest as is consistent with supporting nutrition. Of all special drugs, calomel in doses of one-eighth or one-sixth grain, laid dry on the infant's tongue, is perhaps the one which is the most generally successful; but our chief reliance should be placed on a careful diet, and on stimulating and hot applications, so as to promote the circulation and encourage the free action of the skin. The existence of cold feet alone would be a sufficient obstacle to the success of any treatment whatever.

Art. 243.—*Treatment of Diarrhœa in Infants.*

By K. Weiser, M.D.

(*Wien. Med. Wochenschrift*, No. 35, 1871.)

Dr. Weiser objects to the usual modes of treating diarrhœa in children by means of stringent mixtures, warm poultices on the belly, and injections of mucilaginous fluids; instead, he prefers to envelope the child in a moist cloth, with a warm covering around this; when free perspiration has been induced the skin is rubbed with a moist cloth. He gives a little coffee and milk with a small quantity of carbonate of soda several times daily. If the temperature of the body has been reduced by these means, cold cloths, changed every five or ten minutes for some time, are applied, and he prescribes five drops of the solution of acidulated sulphate of iron four times a day.

Art. 244.—*Treatment of Chronic Diarrhœa in Children.*

By J. F. Meigs, M.D., Physician to the Pennsylvania Hospital, and William Pepper, M.D., Physician to the Philadelphia Hospital.

("Treatise on Diseases of Children," 4th edition, pp. 9221, 1870.")

The following extract shows the manner in which the modes of treatment are indicated:—

"It should never be forgotten in the treatment of chronic diarrhœa in children, that the most important point of all is the regulation of the diet and other hygienic conditions. We are fully convinced that we have seen several children saved from death by attention to these points, and by the persevering and careful employment of tonics and stimulants. It often happens, after the disease has lasted for some weeks or months, that the powers of the stomach are almost wholly lost. The child either refuses food or takes so little that the quantity is evidently insufficient to carry on the vital processes, or the greater part of what is taken is rejected by vomiting, or lastly, much of it passes off through the bowels, and appears in the stools in an undigested state, forming what is called lientery. If this condition of things is allowed to continue, the emaciation and exhaustion make rapid progress, and the case must soon terminate fatally. Under these circumstances all the ingenuity and skill of the physician are required to find articles of diet of a kind to recall and tempt the child's worn-out and often perverted appetite, and which, at the same time, may be digestible and nutritious, and tend to restore vigour to the digestive function. If the stomach is frequently sick, it is best to abandon all remedies but those which are stimulating and strengthening, and especially to forbid all such as are in the smallest degree nauseous. We would indeed depend entirely on the use of repeated doses of the oldest and most delicate brandy that could be found, of which from one to two teaspoonfuls

may be put into a wineglassful of cold water, and the whole given by teaspoonfuls in the twenty-four hours: or fifteen to twenty drop doses of the elixir of Peruvian bark every three or four hours may be used; or Hawley's wine of pepsine, in half teaspoonful doses three times a day; or, two or three drops of tincture of nux vomica in sweetened water three times a day, if the bitterness does not cause nausea or increase the loathing. In such cases, wine of iron, in doses of twenty drops to a fourth of a drachm, with syrup of tolu and caraway water, will sometimes do exceedingly well; or the following, which has sometimes succeeded in our hands: ℞ Tr. ferri. chlorid., fʒj; acid. acet. dil., fʒj; liq. ammon. acetat., fʒij; syrup. simp., fʒss; aquæ, fʒij: M. Dose at four years, a teaspoonful, and under that age, half a teaspoonful three or four times a day.

"In some very obstinate cases, especially where there is any reason to suspect the existence of a malarial element in the case, from half a minim to one minim of Fowler's solution of arsenic, with the wine of iron, three times a day, has been very serviceable. While this is being done, an occasional dose of anodyne, just enough to tranquillize without stupefying may be given. If the rectum will retain it, it is better to give it by enema. In some cases we have found the aromatic syrup of galls given with brandy, to be taken by the child without any difficulty or disgust.

"Exercise by riding and exposure to the air, which, however, must never be carried so far as to induce positive fatigue, are all-important. In some very severe and tedious cases, change of residence or travelling has been known to effect a cure after all remedies and other means had failed."

Art. 245.—*On Uratic Infarctions of the Kidneys in Infancy.**

By M. Parrot.

(*Gazette Hebdomadaire*, No. 47, 1871.)

M. Parrot, in November, 1871, presented to the Society the kidneys of a newly-born infant, in which he showed uratic infarctions.

This lesion, frequent in infants, is characterized on section of the kidney by a series of tufts of an ochre-yellow colour, which correspond to the arrangement of the tubes of Bellini in the medullary substance. Between the yellow rays are found red lines, which are more numerous and larger towards the base of each pyramid than at the apex. The yellow streaks are sometimes scanty; at other times they are so pressed together that the whole pyramid acquires an uniform yellow colour. By compressing the papillæ one may squeeze out some thick fluid resembling water mixed with some yellow pollen. This yellow material is found sometimes deposited along the whole track of the urinary mucous membrane from the kidney to the extremity of the prepuce.

The microscope shows that the tubes of Bellini are more or less

* Communicated to the Société Médicale des Hôpitaux, Paris.

obstructed by this yellow material. Sometimes the tubes, more distended at some parts than at others, are varicose, and the epithelial lining can no longer be made out. This material, however, occupies only the interior of the tubes, and never penetrates the epithelial cells, but merely masks them. When isolated this material, observed under moderate powers, presents itself under the form of cylindrical stalactites with rounded extremities. These stalactites may be decomposed into a mass of sporules unequal in size, but regular in shape, opaque, black at the centre, brown at the periphery, and striated from the centre to the periphery by well-distinct rays. The surfaces are notched. After crushing these spheres between two glasses, they may be seen to be composed of amorphous and opaque granules.

There have been various opinions as to the nature of these bodies. Virchow thinks that they are formed of lithate of ammonia; he does not, however, seem to have made any chemical analysis. M. Milne Edwards agrees in the view taken by Virchow. Dr. West regards them as deposits of lithic acid, or rather of lithate of ammonia. M. Parrot states that they are composed of lithate of soda: the reaction with sulphuric acid, which would give rise to the formation of lithic acid crystals, would prove this.

M. Parrot's opinion is the correct one. One cannot admit that the deposit consists of lithate of ammonia, as this substance is found only in alkaline urine. Lithate of soda, on the other hand, may be found in acid urine, and may be arranged with the aspect of spheres. The urine of infants in whom this lesion may be found is always acid, through the excess of lithic and hippuric acids—Virchow himself allows this fact.

M. Parrot insists upon the conditions under which the concretions are produced. Virchow, and after him Cornil and Vogel, consider them of physiological origin. Virchow bases his opinion on a small number of facts. The argument by which he seeks to establish that uric infarctions constitute a normal product occurring between the twelfth and the nineteenth days of life, seems at first sight to be irrefutable, and yet it is based only on hypothesis. According to these views, external influences and the new life of the infant determine forty-eight hours after death such chemical changes in the tissues that an abundant excretion of lithate of ammonia ensues. The excess of this salt in the urine would be the cause of its precipitation in the renal tubuli. Virchow did not think of comparative physiology as a support of his views, else he would have sought this lesion in the kidneys of well-developed young animals killed a short time after their birth. Had he done so, he would have found a plain contradiction, before which all explanation, however ingenious, would have been obliged to yield. In fact, M. Parrot has assured himself in a great number of instances that uratic infarctions are not to be found in the tubes of Bellini of the kidneys of young mammals or of young birds in a state of perfect health.

Moreover, in his theory Virchow has taken no account of certain contradictory facts which he had met with; and, indeed, he does not seem to have had in his mind the pathological conditions which had led to death. It is probable, however, that the majority of the infants

whom he examined had succumbed to the most common of infantile affections—that is to say, to disorders of digestion.

But these disorders induce a profound perturbation in nutrition, and consecutively numerous and varied visceral changes. Under these circumstances, the infants secrete much fluid, are badly nourished, do not grow, and destroy their own substance: they become autophagic. The incompletely transformed proteinic elements accumulate in the blood, and there is a tendency to their elimination by the kidneys. There an insufficient quantity of water is met with for washing them away, and then they are deposited in the straight tubule of the kidney.

This explanation differs slightly from that given by Virchow, but M. Parrot, whilst he attributes to the process a pathological cause, relies upon a considerable number of observations, in which he had noted pathological conditions leading to death, and so shows that it has an exclusively morbid origin.

Virchow, dominated by his theoretical ideas, says that the above described deposit is not to be met with before the twelfth day nor after the nineteenth day, and he considers its presence a sign of great utility in legal medicine. According to this pathologist, the existence of these infarctions in a newly-born child, even if cadaveric decomposition have rendered uncertain the indications derived from examination of the lungs, will enable one to determine with precision whether the infant was living or dead during the period reaching from the twelfth to the nineteenth day after birth.

This theory is contradicted by facts. On the one hand, Virchow acknowledges to have met with the deposit in the fœtus; and on the other hand, states that he had seen a very abundant deposit in the canaliculi of a syphilitic infant who died on the twenty-ninth day. Finally, M. Parrot asserts that he has frequently met with this lesion in infants aged one month, thirty-four days, thirty-nine days, and in one instance in a little girl who died from variola in the fifth month of her age.

One sees, then, from M. Parrot's researches, how weak is the theory of the Berlin Professor, and how false are the deductions which he has made from it.

To resume: abundant deposits of lithate of soda are frequently met with in the tubes of the renal pyramids in children who have succumbed to diseases of the digestive canal, with considerable loss of fluids and autophagia.

This lesion is always secondary, and demands no direct treatment.

Art. 246.—*On the Treatment of Empyema in Children.**

By W. S. Playfair, M.D., F.R.C.P.

(*The Lancet*, January 27.)

The author described the peculiarities of pleurisy in children as contra-distinguished from the same disease in the adult. He then referred to the change of opinion which had of late years been observed with regard

* Read at a Meeting of the Obstetrical Society of London, January 3.

to the operation of paracentesis. This operation in ordinary serous pleurisy evidently stood on a very different footing from the same operation in empyema. In the former we only sought to relieve the distension by removing some of the fluid and allowing the remainder to be more readily absorbed, while in the latter the chance of absorption was diminished to a minimum; and it would be a great gain if we could effect continuous drainage of the pleural cavity, and at the same time effectually exclude the entrance of air. The author then described the method of drainage by Chassaignac's tube, with illustrative cases. He then described the method of cutaneous sub-aqueous drainage advocated by himself, and related the history of three cases successfully treated by it. The results of these were very satisfactory, and contrasted remarkably with the cases treated by pneumatic aspiration by Bouchut. The paper was illustrated by drawings of the chests of five children, taken by Dr. Gee's cystometer, which showed how much greater the chest deformity was when air had been allowed freely to enter the pleural cavity.

Dr. Hilton Fagge felt bound to mention to the Society that he had recently had a case in which the same method had been employed, and with results not entirely so satisfactory. The pus had, in this instance, made its way by the side of the india-rubber tube, and continued to discharge. It was of great importance that the tube should be tightly grasped by the skin, and for this reason it was better to remove the canula before introducing the india-rubber tube, which should be of the same diameter.

Art. 247.—*On the Treatment and the Origin of Purulent Ophthalmia in New-Born Children.*

By R. Liebreich, Ophthalmic Surgeon and Lecturer to St. Thomas's Hospital.

(*Medical Times and Gazette*, December 13, 1871.)

The treatment consists, first, in careful cleansing; secondly, in the local application of cold; and, thirdly, in cauterizations with mitigated nitrate of silver (one part of nitrate of silver and two parts of nitrate of potassium fused together). As regards the cleansing, it is above all necessary to explain to the attendants the importance of it, for, ordinarily, the fear of injuring the child prevents them from properly opening its eyes in order to remove the secretion. Mr. Liebreich does not recommend syringes, so generally used, for cleansing—first, because they are dangerous to the attendants, who, in using them, may easily have some of the contagious matter spattered into their eyes; secondly, because by this method the secretion is not completely removed, even after pouring much water over the child. A fine sponge or small pieces of moistened linen rag are preferable for effectually cleansing the conjunctiva.

The application of cold, if made in a careful and suitable manner, is of great assistance in the treatment. In the mildest form of the disease

this application alone may even effect a cure in a few days. It is then only necessary to apply, for several hours a day, small linen rags, moistened by being dipped in cold water, changing them constantly. In the more serious cases, on the contrary, when there is much swelling, redness, and heat in the eyelids, and a copious discharge of thick yellow purulent secretion, it is necessary to apply, day and night, without intermission, small rags, previously placed upon ice, and to renew them continually. Later, when the elevated temperature begins to fall, the applications may be discontinued during the night, and gradually reduced, according to the course of the disease. In order to prevent the child from taking cold, it is necessary that the rags should be of a size merely to cover the eyelids without touching the bridge of the nose, and not to make them too wet.

The real curative treatment, cauterization, should only be done with mitigated nitrate of silver. The eyelids must be reversed one after the other, and, after being carefully cleansed, touched with the caustic, which must be passed over all the swollen and red part of the mucous membrane. Before replacing the eyelids in their natural position, it is necessary to neutralize the free nitrate of silver by a drop of salt water. For the first few days only of the disease we may restrict the treatment to the application of cold, and then commence the cauterizations; repeat them once a day, never more frequently, and, after an evident reduction of the disease, once every two or three days. It is important not to repeat the cauterization until the scar of the previous one has disappeared.

To drop weak solutions of nitrate of silver into the eye is not advisable, even in the mildest forms; for the graver forms it is completely insufficient. Cauterization with pure nitrate of silver ought never to be used, neither in this nor in any other disease of the conjunctiva, as it is impossible to limit its effects. The slightest touch with pure nitrate of silver, in fact, produces a strong cauterization, not only not limited to the surface of the mucous membrane, but attacking the subjacent connective tissue. The cicatrization which is the result of such cauterizations produces a permanent irritation of the eye, which cannot be removed by any possible means. None of the other known caustics can replace the mitigated nitrate of silver in the treatment of purulent ophthalmia.

APPENDIX.

ART. 1.—*On the Possibility of Diagnosing Syphilis by Means of Microscopical Examination of the Blood.*

By Dr. LOSTORFER.

(*Medizinische Jahrbücher*, 1 Heft, 1871.)

"The great mistrust with which, in almost all quarters, retailed observations on certain appearances in the blood in infectious diseases are received, induces me to commence this time with the results of my work hitherto obtained, and a statement of the manner in which I have shown that I can distinguish the blood of a syphilitic from the blood of a non-syphilitic individual."

"Prof. Stricker, who was kind enough to put my assertion to the proof, gave to me on several occasions a number of prepared blood tests, concerning the origin of which I was ignorant, some of these having been taken from healthy and others from syphilitic persons. They had been numbered and noted in writing. After three, four, and at the most six days, I made him acquainted with the results of my examination; and then a comparison with the notes showed that—except in those instances where one or more preparations, either immediately after they were made or in the course of the examination, had been found useless, and so placed on one side—there was accordance between these notes and my results. Those tests which had been taken from healthy men I indicated as the blood of non-syphilitics, and those from syphilitic patients as the blood of such individuals.

"In a similar manner I have successfully carried out with success a test put by Prof. Hebra.

"The manner in which I have carried out my investigation is as follows: A drop of blood obtained by a puncture in the skin is transferred as rapidly as possible to a smooth slide, and covered by a thin protector. The blood test thus obtained is now placed in a bell-glass, arranged as a moist chamber, in which there is a stand for twelve preparations. In every glass of this kind I place the blood tests both of syphilitic and non-syphilitic individuals.

"The examination of these preparations is made daily with a N. 10, oc. 3, Hartnack's immersion lens.

"Whilst in general, during the first two days, nothing of a foreign nature was to be seen beyond some vibriones, bacteria, and sometimes the early forms of sarcena, on the third, many times on the fourth or

fifth day, and exceptionally after the first twenty-four hours, I found small bright bodies, some of which were at rest and others presented vibratile movements. On some of these bodies a small process could be made out.

"On the fourth, exceptionally on the third, fifth, or sixth day, these bodies had become larger and increased in number. Many of the enlarged bodies presented the above-described process, which proved itself clearly to be due to a process of budding. In some, this had increased so much in size that it was almost as large as the maternal body.

"On the following days, the bodies increased more and more in size, so that some soon reached or even exceeded the size of shrivelled red blood-corpuscles. At the same time, however, smaller corpuscles were present in all gradations of size. Bud-formation also was now a frequently observed phenomenon, and many corpuscles had not only one outgrowth but several, which, some with and others without a stalk, were fixed to the maternal corpuscle. There were many instances in which one outgrowth was the bearer of secondary buds. Not all of these corpuscles were circular; many were irregular in form. After the specimen of blood had been kept for eight or ten days, a vacuole was formed in each of the larger corpuscles, which enlarged more and more, so that at last it was surrounded by only a thin membrane, indicated by a double contour. At this stage the development of the corpuscles had reached its end, and no further changes were observed, even in those cases—which, however, were very rare—where the blood remained suitable for examination at the end of a month.

"I proved also the conduct of the corpuscles on the addition of various fluids—such as solutions of sugar, distilled water, Pasteur's fluid, a solution of common salt, and a solution of acetic acid. These fluids, on the first day of their addition, had, notwithstanding their diversity, the same action. The corpuscles became shrivelled, and ran together into a quite irregularly-formed and opaque mass, and all further development was arrested. This change occurred with the greatest rapidity on addition of solution of sugar and of Pasteur's solution.

"At a later period, say about six or eight days after the appearance of these corpuscles, shrivelling occurred on the addition of one of the above mentioned fluids, but by no means to such an extent as before. Many of the corpuscles appeared to be folded and had acquired an irregular form. Others retained their circular form, but were smaller, their contours were more distinct and their brightness not so well-marked. I have observed however a further development on the addition of distilled water, of an extremely diluted solution of sugar, and, in one case, of a solution of salt. In those instances the vacuoles enlarged rapidly, budding occurred, and there was also a formation of long extended processes which resembled very much the germ sacs of fungi.

"With regard to the quantity of the corpuscles in question; this varied very much: in some instances they were much scattered, in others they were very numerous. In one instance I counted on the fourth day, fifty in the field of the microscope. Whether the number of corpuscles has any relation to the existing syphilitic symptoms remains to be determined by further investigation.

"The deviations from the above described modes of development consist chiefly in a more rapid or a slower development. In the first instance I found on the fourth day corpuscles which had attained almost the size of shrivelled blood-corpuscles. In cases of this kind, the corpuscles undergo the most manifold changes of form. The bud-formation was extremely unimportant. In later cases the corpuscles became distinctly perceptible for the first time on the fifth day; their growth was very slow, and when fully attained was rapidly followed by dissolution.

"Although I had at first examined the blood of many healthy men without finding any of the above described corpuscles, I still persevered in the examination, and during a period of three months, I made use of simultaneously with specimens of blood from syphilitic subjects, specimens from healthy or at least non-syphilitic persons, and recently blood from patients affected with gonorrhœa, ulcers, and eczema. Generally the blood of syphilitic was kept in the same chamber with that of non-syphilitic persons. I have recently examined blood specimens of several patients suffering from typhus and lupus, and also one with elephantiasis græcorum.

"Now, since in no blood specimen from a non-syphilitic person, could I, notwithstanding the most careful examination, find any of the above described corpuscles, therefore must the possibility of finding these after several days' incubation in the blood of syphilitic persons, be regarded as somewhat characteristic of this disease. From this time I would give to those corpuscles the provisional name of syphilitic corpuscles.

"I have not yet carried on investigations at all times of the year, but have had occasion to remark that special attention ought to be paid to the temperature. Many of my researches were made at an indoor temperature fluctuating betweeen 10° and 18° R., others in a place where the fluctuations of the temperature were still more considerable. In low temperatures I found that the results were negative."

Dr. Lostorfer gives the details of thirteen cases of syphilis in which the blood of the patients presented the above described corpuscles.

Art. 2.—*On Lostorfer's Corpuscles.*

By Prof. Besiadecki.

(*Wiener Medizinische Wochenschrift*, No. 8, 1872.)

"1. Lostorfer's corpuscles make their appearance in the blood of syphilitic individuals at the fourth or fifth day, and at first in the non-coagulable parts of the serum slightly clouded with blood cells. They present the form of small, clear, and extremely fine nuclei to each of which is generally attached a short and fine filament. From the fifth to the tenth days these small nuclei increase in number, and some few among them become as large as leucocytes of the blood; they are sometimes rounded in form, but more frequently irregular, shining, and active bodies, with a simple contour, and resembling very closely the protoplasm of young leucocytes. These elements remain free from colour, even when the serum is stained by the colouring matter of the blood,

and finally appear among the blood cells. In some rare instances small cavities with well marked bodies resembling vacuoles are met with in the interior of these corpuscles.

"2. I have met with them in this form, and in very great numbers, in a patient who for five weeks had presented a preputial induration as large as an almond, for which he had not been subjected to any internal treatment. They were also observed in the blood of a patient affected with corona veneris, who was cured by inunction; and finally in a patient aged sixteen years, who presented symptoms of congenital syphilis, that is to say, deficiency of the velum palati and of the pillars of the fauces, softening gummata on the legs, and tibial exostoses.

"3. Lostorfer's corpuscles do not appear in equal quantities in all the specimens obtained in a single examination of the blood, and preserved in the same manner in one and the same moist chamber. They will not be developed if the drop of blood be too forcibly compressed, and if immediately afterwards the serum take up the colouring matter of the blood. They do not appear also in preparations in which crystals of hæmato-globulin have been formed.

"4. Besides Lostorfer's corpuscles vibriones appear sooner or later in variable quantities.

"5. In the blood of non-syphilitic individuals Lostorfer's corpuscles may be also seen at about the seventh or eighth day, but in smaller numbers. I have observed these bodies in the blood of subjects affected with organic lesions of the heart with rheumatism, with Addison's disease, with arthritis, with jaundice, with pneumonia, with tuberculosis, with variola, and with puerperal fever and septicæmia. They do not always develope themselves under the same conditions as in the blood of syphilitic individuals.

"6. In many preparations, numerous crystals of hæmato-globulin were produced. These were presented in the form of rhombohedral crystals, which were generally oblique, and their longest surfaces were frequently close together, so that the crystals under a low power resembled fine needles. Many crystals formed large rhomboidal masses. Those appeared in the blood both of syphilitic and non-syphilitic individuals, sometimes at certain parts of the field, at others disseminated in innumerable quantities over its whole extent. They appeared sometimes at the end of about twenty-four hours, in other instances after the specimen had been kept in a moist chamber at a temperature of 14° or 18°C.

"7. From the formation and aspect of Lostorfer's corpuscles, it may be concluded that these corpuscles are not small drops of oil, but rather constituent parts dissolved in the blood. My colleague, Prof. Stopczanski believes that they are small nuclei of para-globulin, as they resemble a precipitate of para-globulin formed by the action of carbonic acid on the serum of the blood, and again because they are considerably diminished after having been subjected to the action of oxygen. They are decomposed on the addition of a solution of common salt (one part to ten parts of water. Vibriones naturally are not thus decomposed.

"8. Further researches will doubtless show why para-globulin appears in greater abundance, or presents a more decided aspect in the blood of syphilitic individuals."

Art. 3.—*The Synovial Membranes in Pyæmia.**

By Robert Hamilton, F.R.C.S., Surgeon to the Southern Hospital, Liverpool.

(*The Lancet*, May 25.)

After a brief account of the views at present held by the majority of writers on pyæmia as to the way in which the morbid changes found in this disease are brought about, the anthor dwells upon the fact of the synovial membranes being so generally attacked in pyæmia—a circumstance that has not hitherto attracted sufficient attention, though it makes it extremely probable that the first step in those forms of surgical pyæmia most commonly met with in hospital practice is to be found there. All the cases occurring at the Southern Hospital for the last thirteen years, of which particulars have been kept, had some joint affection. In some the pathological changes in the joint were slight, in others most extensive. That the disease observable in the joints beg in i n the synovial membrane is rendered probable from the character of the pain, and from the appearances found after death.

The poison of pyæmia, as observed in hospital practice, is *sui generis* Whether generated in the system from a combination of constitutional and surrounding conditions, or entering as a specific germ through a wound, it is a poison having a special affinity for certain structures, and to these it passes at once. The structures are here assumed to be the synovial membranes. In what this affinity or attractivencss consists we are as yet ignorant, and can but illustrate it by what takes place in other diseases, such as the cholera poison, and the scarlatinal poison, or the producer of tetanus; whether it is a something evolved within the system, or introduced from without, it goes at once to certain nerve-tissues, and in them creates changes which set up other morbid action. Many drugs illustrate the same fact. Strychnia when swallowed, or when subcutaneously injected, has but one form of action, like the poison of tetanus,—it affects nerve-tissue only. The strong analogy between pyæmia at the commencement, and acute rheumatism, has often been observed. In both there are the rigors, the fever, the rapid pulse, the profuse swcating, but above all there is the pain and swelling of one or more joints. It seems probable that in both an entity has entered the system whose habitat is the joints. We cannot tell in what consists the difference of the two poisons, so that the one as a rule eventuates in recovery, and the other in a train of pathological changes whose termination is death. In both cases the tissue first affected is the synovial membrane. The abnormal action induced in it leads to an increased secretion of synovia, probably unaltered in its character and constituents in rheumatism, but of an abnormal kind in pyæmia. In the case of the synovial fluids there is in most joints a limit to its quantity; so tightly is the synovial sac compressed by surrounding tissues which are not yielding that an amount of tension quickly ensues, which leads to a forced absorption

* Read at a Meeting of the Royal Medical and Chirurgical Society May 14th.

of some of the effused fluid, and then ensues in acute rheumatism, and probably as a necessary sequence, an extension of the disease to other synovial sacs, and often to the pericardium, a serous membrane, but closely allied in its nature to a synovial membrane. This augmented synovial fluid is in rheumatism a bland and innocuous fluid—a mere increase of the natural secretion; but in pyæmia it is in a decomposing state, developing rapidly germs of a lower organization; and when such a fluid has been absorbed, and in its course reaches the minute capillaries of the lungs, some of its morbid cells coagulate the fibrine of the blood there, and become arrested, and thus are formed the nuclei with which the lungs are studded, around which more fibrine is deposited, and the pathological changes follow described by Virchow and others.

In conclusion, the author states that in limiting the paper to a consideration of the fact of the synovial membranes being the tissues first affected in many forms of pyæmia, he has not lost sight of the probability of many other phases of pyæmia, having their beginnings in one or other of the serous membranes, these two membranes being so closely allied in their microscopic characters.

Art. 4.—*A Chapter in the History of Cholera.**

By B. G. Jenkins, of the Inner Temple.

(*Medical Times and Gazette*, May 25.)

On Friday evening, the 26th April, Mr. B. G. Jenkins, of the Inner Temple, read before the Historical Society a remarkable paper on cholera, founded on a communication to the Russian Imperial Academy of Sciences, and now in the hands of the Medical Council of the Minister of the Interior.

Mr. Jenkins maintained that no true advance could be made in any science founded on experience, and looking to facts for its development, until the facts of that science, so far as they extended, had been recorded and correctly interpreted, and that it is because we have been looking at the facts, which have been accumulating for half a century, as facts, without attempting to show—or rather, without succeeding in showing—in what relation they stand to each other, that we are really no wiser than we were forty years ago. He held that, instead of one "home" of cholera in the delta of the Ganges, there were seven, all situated on or near the tropic of Cancer, equally distant from each other, of which the most important is that at the mouth of the Ganges; that the others are to the east of China, to the north of Mecca, on the West Coast of Africa, to the north of the West India Islands, to the West of Lower California, and among the Sandwich Islands; and that a reference to the map would show that the recorded appearances of cholera over the globe may be satisfactorily explained by supposing seven atmospheric streams, each 1400 miles in breadth, to proceed in a north-west direction; and that at some periods, as in 1833, 1850, and 1866, nearly all the streams were in activity.

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* Communicated by Dr. Charles Rogers, Historiographer to the Historical Society (Earl Russell, President).

Having pointed out the course of these streams on a map especially prepared, and shown how the disease moved within the limits of each, in both the north-west course and its south-east extension across the equator, Mr. Jenkins, in tracing in detail the course of the cholera in India during 1817 and 1818, called attention to a remarkable law which manifested itself—a law which he held to be applicable generally wherever cholera appears. Although the course of cholera during 1817 was not very clear, still it was, he believed, evident that it was north-west and south-west. The lull in virulence and advance which occurred in December, 1817, continued till March, 1818, when cholera broke out again just where it had ceased the previous December. He drew attention to a very recent similar instance: the cholera last year halted on the western border of Russia, and about a fortnight ago broke out in Poland, which augurs ill for the north of England this year. The remarkable law which manifested itself was that in 1818 the cholera advanced simultaneously in two directions—north-west and south-west—in such a manner that all places attacked at any given time by its north-west advance were situated at right angles to all the places attacked at the same time by its south-west advance. The mode of double advance was made evident by cutting a piece of paper square, placing a corner upon the map at Calcutta, and moving it across India in a direct line to Surat. In 1819 the cholera crossed the Arabian Sea to Muscat, and passed simultaneously through Persia, and up to 1823 advanced as far as Asia Minor and the Caspian, and then died out. In 1823 a fresh outbreak occurred in India; this steadily proceeded to the north-west, and halted in the west provinces of Russia in 1830, and the next year broke out in full force in the same locality—thus presenting a parallel to 1871-72—and went as far as Britain. By referring to the map, he said it would be seen that all places attacked by this stream of cholera lie within the boundaries represented by two lines—one drawn from the southern point of India to the north of England, and the other from the Ganges through Orenburg to Archangel. Mr. Jenkins having described with great minuteness the rise and progress of the other six streams, bringing the subject down to the present year, stated that Europe was liable to attack from two great sources—India and Arabia—Russia and Northern (and partly Central) Europe coming under the influence of the Indian stream, Southern and Western (and partly Central) Europe under the influence of the Arabian, and that the Continent would certainly be attacked by both this year. He called attention to a fact worthy of mention, that all the places recorded by Dr. Gavin Milroy as hitherto unaffected by cholera lie outside these streams, or in their possible, but not actual, extension.

Having stated that he was prepared to give in another paper on the origin of the disease a full explanation of some well-known points about cholera, such as its partial connexion with the east wind, its following the course of large rivers, its greater prevalence on tertiary strata, alluvial tracts, and the deltas of rivers, and its comparative rarity on secondary and primary strata, Mr. Jenkins proceeded as follows:—

"It was not my intention at the present time to enter into the question of the origin of the disease, but having read a few days ago that Dr. Buchanan in this very hall congratulated the meeting on

being able to number among the things of the past the time when the propagation of cholera was supposed to be due to all manner of cosmic influences, and on having reached 'a solid basis of fact and knowledge upon which further observation might be built with security,' I am tempted to observe that I, for one, maintained that this despised theory, which Dr. Buchanan fancies is buried and put out of sight, is the correct one. I maintain that cosmic influence lies at the origin of cholera —that cholera is intimately connected with auroral displays and solar disturbances. I believe that I am able to show that a remarkable connexion exists between the maxima and minima of cholera epidemics and of solar spots; and in directing your attention to this map, on which I have represented graphically the amount of cholera and the number of sun-spots for the last fifty years, I wish to show that there is here also 'a solid basis of fact and knowledge upon which further observation might be built with security.' You are all probably aware that the great astronomer Schwabe discovered that the sun-spots have what is called a ten-year period—that is, there is a minimum of spots every ten years. It was also discovered that the diurnal variation in the amount of the declination of the magnetic needle has a ten-year period. The same was proved in regard to earth-currents, and also auroral. The maxima and minima of the four were found to be contemporaneous This was a great result; but Professor Wolf, on tabulating all the sun-spots from the year 1611, discovered that the period was not ten years but 11·11 years. This period is now the accepted one for sun-spots, and it has been established for the magnetic declination, and by Wolf for auroral. Now, it is a curious fact that the last year of every century—as 1800—has a minimum of sun-spots; so that the minima are 1800, 1811·11, 1822·22, 1833·33, &c. The maxima do not lie midway between the minima, but anticipate it, by falling on the year 4·77 after a minimum—for example, 1800 was a minimum year, then 1804·77 was a maximum year.

"Now, cholera epidemics have, I believe, a period equal to a period and a half of sun-spots. Reckoning, then, from 1800, we get as a period and a half the date 1816·66, which was shortly before the great Indian outbreak; also, 1833·33, 1849·99, 1866·66—years having a maximum of cholera; and 1883·33 as the next year in which there will be a cholera maximum. It follows from what has been already said that 1783·33 would be a year in which cholera would be at a maximum. Now, it is a fact that in April, 1783, there was a great outbreak of cholera at Hurdwar.

"I would call attention to the parallelism of increase and decrease of these curves. I am not prepared to say that sun-spots originate cholera, for they may both be the effects of some other cause, which may, indeed, be the action of the other planets upon the earth and upon the sun. If that be the case—and I see no reason why it should not—we may then have an explanation of the minor periods, and of the large period of fifty-six years, which Wolf believes he has detected, and also of the minor periods observed in cholera epidemics.

"My own opinion, derived from an investigation of the subject, is that each planet in coming to and going from perihelion—more especially about the time of the equinoxes—produces a violent action upon the sun, and has a violent sympathetic action produced within itself;

internally manifested by earthquakes, externally by auroral displays and volcanic eruptions, such as that of Vesuvius at the present moment—in fact, just such an action as developes the tail of a comet when it is coming to or going from perihelion. And when two or more planets happen to be coming to or going from perihelion at the same time, and are in or nearly in the same line with the sun—being, of course, nearly in the same plane—the combined violent action produces a maximum of sun-spots, and in connexion with it a maximum of cholera on the earth. The number of deaths from cholera in any year—for example, the deaths from cholera in Calcutta during the six years 165-70—increased as the sun passed from perihelion, especially after March 21; came to a maximum when it was in aphelion; and increased again when the earth passed to perihelion, and notably after equinoctial day—thus acting as a fair test of my theory."

ART. 5.—*On Ammonia in the Urine in Health and Disease.**

By C. M. TIDY, M.B., and W. B. WOODMAN, M.D.

(*The Lancet*, June 8.)

At a meeting of the Royal Society, on May 30th (Mr. G. B. Airy, C.B., president, in the chair), Mr. T. B. Curling, F.R.S., introduced a paper "On Ammonia in the Urine in Health and Disease," by C. M. Tidy, M.B., and W. B. Woodman, M.D.

The authors differ from Neubauer regarding the average normal excretion of ammonia. They find it to be about two grains, while Neubauer gives 10·8 grains per diem. The total number of cases upon which observations were made exceeded 200. The method adopted by the authors is as follows:—

The freshly passed urine is to be first diluted with a given bulk of distilled water sufficient to destroy all apparent colour, a known quantity of the urine being taken in each case. To this is to be added an excess of Nessler's solution, and then compared with the tint depth produced by known quantities of ammonia in a similar bulk of liquid, treated with the same solution. The trace of ammonia in the water itself must be always allowed for. The external temperature in the observations was always about 62°. They regard 60 oz. of urine as the normal amount daily excreted by adults.

The authors found that in health the excretion of ammonia is largest under thirty-five years of age; increased after meals and during exercise. They consider that this excretion by the kidneys is governed by a similar law to that which regulates the formation of dew.

In disease the lowest quantities were met with when the pulse was rigid, the highest average being met with when the pulse was nearly normal. The excretion was increased when the skin and tongue were moist, when the diet was full and included stimulants, and when the bowels were open. Acid medicines also increased the secretion.

A number of special diseases are alluded to. The cases taken just before death are very remarkable, showing a vast decrease in the amount of ammonia. In two cases it was entirely absent, the only cases of entire absence known to the authors.

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